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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6:			(11) International Publication Number	WO 98/37067
C07D 207/34, 233/90, A61K 31/4 C07D 403/14, C12Q 1/68	415,	A1	(43) International Publication Date:	27 August 1998 (27.08.98)
(21) International Application Number:	PCT/US98	8/0171	4 US	60/043,444 (CIP)

 A TOTAL TO A	20 Y	 	

(22) Internat	ional Filing Date.	29 January 19	70 (27.01.70
	•		

(30) P	riority Data:		
	PCT/US97/03332	20 February 1997 (20.02.9	7) WO
	(34) Countries for w	hich the regional or	
	international a	pplication was filed:	US et al.
	60/043,444	8 April 1997 (08.04.97)	US
	60/042,022	16 April 1997 (16.04.97)	US
	08/837,524	21 April 1997 (21.04.97)	US
	08/853,522	8 May 1997 (08.05.97)	US
	PCT/HS97/12722	21 July 1997 (21 07 97)	wo

(34) Countries for which the regional or international application was filed: US et al.

(63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Applications

US	08/853,522 (CIP)
Filed on	8 May 1997 (08.05.97)
US	08/837,524 (CIP)
Filed on 21	1 April 1997 (21.04.97)
US	08/607,078 (CIP)
Filed on 26 Fe	bruary 1996 (26.02.96)
US	60/042,022 (CIP)
Filed on 10	5 April 1997 (16.04.97)

Filed on

60/043.444 (CIP) 8 April 1997 (08.04.97)

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- (81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).

Published

With international search report.

(54) Title: DESIGN, SYNTHESIS AND USE OF SPECIFIC POLYAMIDE DNA-BINDING LIGANDS

(57) Abstract

The invention encompasses improved selective polyamides for binding to specific nucleotide sequences of double stranded DNA as well as methods for designing and synthesizing polyamide DNA binding ligands that are selective for an identified specific nucleotide sequence. The 3-hydroxy-N-methylpyrrole/N-methylpyrrole carboxamide pair specifically recognizes the T.A base pair, while the N-methylpyrrole/3-hydroxy-N-methylpyrrole pair recognizes A.T nucleotide pairs. Similarly, an N-methylimidizole/N-methylpyrrole carboxamide pair specifically recognizes the G.C nucleotide pair, and the N-methylpyrrole/N-methylimidizole carboxamide pair recognizes the C.G nucleotide pair.

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DESIGN, SYNTHESIS AND USE OF SPECIFIC POLYAMIDE DNA-BINDING LIGANDS

The U.S. Government has certain rights in this invention pursuant to Grant Nos. GM 26453, 27681 and 47530 awarded by the National Institute of Health.

CROSS REFERENCE TO RELATED APPLICATIONS

This application is a continuation-in-part of PCT/US97/03332 filed February 20, 1997, Serial No. 08/853,522 filed May 8, 1997 and PCT/US 97/12722 filed July 21, 1997 which are continuation-in-part applications of Serial No. 08/837,524, filed April 21, 1997, Serial No. 08/607,078, filed February 26, 1996, provisional application Serial No. 60/042,022, filed April 16, 1997 and provisional application Serial No. 60/043,444, filed April 8, 1997.

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BACKGROUND OF THE INVENTION

Field of the Invention

This invention relates to polyamides which bind to predetermined sequences in the minor groove of double stranded DNA.

Description of the Related Art

The design of synthetic ligands that read the information stored in the DNA double helix has been a long standing goal of chemistry. Cell-permeable small molecules which target predetermined DNA sequences are useful for the regulation of gene-expression. Oligodeoxynucleotides that recognize the major groove of double-helical DNA via triple-helix formation bind to a broad range of sequences with high affinity and specificity. Although oligonucleotides and their analogs have been shown to interfere with gene expression, the triple helix approach is limited to purine tracks and suffers from poor cellular uptake. The development of pairing rules for minor groove binding polyamides derived from N-methylpyrrole (Py) and N-methylimidazole (Im) amino acids provides another code to control sequence specificity. An Im/Py pair distinguishes G•C from C•G and both of these from A•T or T•A base pairs. Wade, W.S., Mrksich, M. & Dervan, P.B. describes the design of peptides that bind in the minor groove of DNA at 5'-(A,T)G(A,T)C(A,T)-3' sequences by a dimeric side-by-side motif. J. Am. Chem. Soc. 114, 8783-8794 (1992); Mrksich, M. et al. describes antiparallel

side-by-side motif for sequence specific-recognition in the minor groove of DNA by the designed peptide 1-methylimidazole-2-carboxamidenetropsin. Proc. Natl. Acad. Sci. USA 89, 7586-7590 (1992); Trauger, J.W., Baird, E. E. Dervan, P.B. describes the recognition of DNA by designed ligands at subnanomolar concentrations. Nature 382, 559-561 (1996). A Py/Py pair specifies A•T from G•C but does not distinguish A•T from T•A. Pelton, J.G. & Wemmer, D.E. describes the structural characterization of a 2-1 distamycin A-d(CGCAAATTTGGC) complex by two-dimensional NMR. Proc. Natl. Acad. Sci. USA 86, 5723-5727 (1989); White, S., Baird, E. E. & Dervan, P.B. Describes the effects of the A•T/T•A degeneracy of pyrrole-imidazole polyamide recognition in the minor groove of DNA. Biochemistry 35, 12532-12537 (1996); White, S., Baird, E. E. & Dervan, P. B. describes the pairing rules for recognition in the minor groove of DNA by pyrrole-imidazole polyamides. Chem. & Biol. 4, 569-578 (1997); White, S., Baird, E. E. & Dervan, P.B. describes the 5'-3' N-C orientation preference for polyamide binding in the minor groove. New methods of designing selective compounds and the resulting specific polyamide binding ligands that are designed to target an identified sequence of double stranded DNA are needed to overcome the A•T/T•A degeneracy of pyrrole-imidazole polyamide recognition.

SUMMARY OF THE INVENTION

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It has been found that a new aromatic amino acid, 3-hydroxy-N-methylpyrrole (Hp) when incorporated into a polyamide and paired opposite Py, provides the means to discriminate A•T from T•A. Unexpectedly, the replacement of a single hydrogen atom on the pyrrole with a hydroxy group in a Hp/Py pair regulates the affinity and the specificity of a polyamide by an order of magnitude. Utilizing Hp together with Py and Im in polyamides to form four aromatic amino acid pairs (Im/Py, Py/Im, Hp/Py, and Py/Hp) provides a code to distinguish all four Watson-Crick base pairs in the minor groove of DNA.

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The present invention provides a method for designing specific polyamides suitable for use as DNA-binding ligands, as well as compositions comprising such polyamides, that are selective for an identified target sequence of double stranded DNA. Preferably, the designed specific polyamides are characterized by a dissociation constant of less than 1 nM, as measured by DNase I footprint titration, and greater than ten-fold selectivity for the identified target

sequence over related mismatch sequences, based on the ratio of the corresponding dissociation constants measured by DNase I footprint titrations.

The invention encompasses improved polyamides for binding to the minor groove of double stranded ("duplex") DNA. The polyamides are in the form of a hairpin comprising two groups of at least three consecutive carboxamide residues, the two groups covalently linked by an aliphatic amino acid residue, preferably γ-aminobutyric acid or 2,4 diaminobutyric acid, the consecutive carboxamide residues of the first group pairing in an antiparallel manner with the consecutive carboxamide residues of the second group in the minor groove of double stranded DNA. The improvement relates to the inclusion of a binding pair of Hp/Py carboxamides in the polyamide to bind to a T•A base pair in the minor groove of double stranded DNA or Py/Hp carboxamide binding pair in the polyamide to bind to an A•T base pair in the minor groove of double stranded DNA. The improved polyamides have at least three consecutive carboxamide pairs for binding to at least three DNA base pairs in the minor groove of a duplex DNA sequence that has at least one A•T or T•A DNA base pair, the improvement comprising selecting a Hp/Py carboxamide pair to correspond to a T•A base pair in the minor groove or a Py/Hp carboxamide pair to bind to an A•T DNA base pair in the minor groove. Preferably the binding of the carboxamide pairs to the DNA base pairs modulates the expression of a gene.

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In general, the method provides specific polyamides suitable for use as DNA-binding ligands that are selective for identified target sequences of double stranded DNA having a coding strand sequence of the form 5'-WN1N2 ... N_mW-3' where N is a nucleotide chosen from the group A, T, C and G, W is a nucleotide chosen from the group A and T, and with the coresponding paired antiparallel strand 3'-W'N'1N'2 ... N'_mW'-5' where N' is a nucleotide chosen from the group T, A, G and C respectively to form Watson-Crick pase pairs, W is a nucleotide chosen from the group T and A respectively to form Watson-Crick pase pairs, and m is an integer having a value from 3 to 6 inclusive.

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The preferred corresponding designed specific polyamides resulting from this invention are of the form

$$X_1X_2...X_{m}-\gamma-X_{(m+1)}...X_{(2m-1)}X_{2m}-\beta$$
-Dp

wherein X_1 , X_2 , X_m , $X_{(m+1)}$, $X_{(2m-1)}$, and X_{2m} are carboxamide residues forming carboxamide binding pairs X_1/X_{2m} , $X_2/X_{(2m-1)}$, $X_m/X_{(m+1)}$, and γ is γ -aminobuytic acid or 2,4 diaminobutyric acid and Dp is dimethylaminopropylamide,

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and where

carboxamide binding pair X_1/X_{2m} corresponds to base pair $N_1 \bullet N'_1$, carboxamide binding pair X_2/X_{2m-1} corresponds to base pair $N_2 \bullet N'_2$, carboxamide binding pair X_m/X_{m+1} corresponds to base pair $N_m \bullet N'_m$.

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In general, the specific polyamide DNA-binding ligands were designed by using a method that comprises the steps of identifying the target DNA sequence 5'-WN1N2 ... NmW-3'; representing the identified sequence as 5'-Wab... xW-3', wherein a is a first nucleotide to be bound by the X1 carboxamide residue, b is a second nucleotide to be bound by the X2 carboxamide residue, and x is the corresponding nucleotide to be bound by the Xm carboxamide residue; defining a as A, G, C, or T to correspond to the first nucleotide to be bound by a carboxamide residue in the identified six base pair sequence.

Carboxamide residues were selected sequentially as follows: Im was selected as the X_1 carboxamide residue and Py as the X_{2m} carboxamide residue if a was G. Py was selected as the X_1 carboxamide residue and Im as the X_{2m} carboxamide residue if a was C. Hp was selected as the X_1 carboxamide residue and Py as the X_{2m} carboxamide residue if a was T. Py was selected as the X_1 carboxamide residue and Hp as the X_{2m} carboxamide residue if a was A.

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The remaining carboxamide residues were selected in the same fashion. Im was selected as the X_2 carboxamide residue and Py as the X_{2m-1} carboxamide residue if \boldsymbol{b} was G. Py was selected as the X_2 carboxamide residue and Im as the X_{2m-1} carboxamide residue if \boldsymbol{b} was C. Hp was selected as the X_2 carboxamide residue and Py as the X_{2m-1} carboxamide residue if \boldsymbol{b} was T. Py was selected as the X_2 carboxamide residue and Hp as the X_{2m-1} carboxamide residue if \boldsymbol{b} was A.

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The selection of carboxamide residues was continued through m iterations. In the last iteration, Im was selected as the X_m carboxamide residue and Py as the X_{m+1} carboxamide residue if x was G. Py was selected as the X_m carboxamide residue and Im as the X_{m+1} carboxamide residue if x was C. Hp was selected as the X_m carboxamide residue and Py as the X_{m+1} carboxamide residue if x was T. Py was selected as the X_m carboxamide residue and Hp as the X_{m+1} carboxamide residue if x was A.

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In one preferred embodiment, the polyamide includes at least four consecutive carboxamide pairs for binding to at least four base pairs in a duplex DNA sequence. In another preferred embodiment, the polyamide includes at least five consecutive carboxamide pairs for binding to at least five base pairs in a duplex DNA sequence. In yet another preferred embodiment, the polyamide includes at least six consecutive carboxamide pairs for binding to at least six base pairs in a duplex DNA sequence. In one preferred embodiment, the improved polyamides have four carboxamide binding pairs that will distinguish A•T, T•A, C•G and G•C base pairs in the minor groove of a duplex DNA sequence. The duplex DNA sequence can be a regulatory sequence, such as a promoter sequence or an enhancer sequence, or a gene sequence, such as a coding sequence or a non-coding sequence. Preferably, the duplex DNA sequence is a promoter sequence.

More specifically, "polyamide" refers to a polymer of polyamide subunits of the formula.

where R¹ is chosen from H, NH₂, SH, Cl, Br, F, N-acetyl, or N-formyl.

where R² is C₁₋₁₀₀ alkyl (preferably C₁₋₁₀ alkyl such as methyl, ethyl, isopropyl), C₁₋₁₀₀ alkylamine (preferably C₁₋₁₀ alkylamine such as ethylamine), C₁₋₁₀₀ alkyldiamine (preferably C₁₋₁₀ alkyldiamine such as N,N-dimethylpropylamine), a C₁₋₁₀₀ alkylcarboxylate (preferably a C₁₋₁₀ alkylcarboxylate such as-CH₂COOH), C₁₋₁₀₀ alkenyl (preferably C₁₋₁₀ alkenyl such as CH₂CH=CH₂), or a C₁₋₁₀₀ alkynyl (preferably C₁₋₁₀ alkynyl such as -CH₂C≡CH₃), or a C₁₋₁₀₀L, where L groups can be independently chosen from but is not limited to arylboronic acids, biotins, polyhistidines comprised from about 2 to 8 amino acids, haptens to which an antibody binds, solid phase supports, oligodeoxynucleotide, N-ethylnitrosourea, fluorescein, bromoacetamide, iodoacetamide, DL-α-lipoic acid, acridine,

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captothesin, pyrene, mitomycin, texas red, anthracene, anthrinilic acid, avidin, DAPI, isosulfan blue, malachite green, psoralen, ethyl red, 4-(psoraen-8-yloxy)-butyrate, tartaric acid, (+)- α -tocopheral. Most preferably R² is H, (CH₂)_mCH₃, (CH₂)_mNH₂, (CH₂)_mSH, (CH₂)_mOH, (CH₂)_mNR⁵₂, (CH₂)_mOR⁵, (CH₂)_mSR⁵, where R⁵ = (CH₂)_mCH₃, (CH₂)_mNH₂, (CH₂)_mSH, (CH₂)_mOH and m is an integer from 0 to 6.

where R³ is chosen from H, NH₂, OH, SH, Br, Cl, F, OMe, CH₂OH, CH₂SH, CH₂NH₂. where R^4 is -NH(CH₂)₀₋₁₀₀NR $^6R^7$ or NH(CH₂)_pCO NH(CH₂)₀₋₁₀₀NR $^6R^7$ or NHR 6 or NH(CH₂)_pCONHR⁶. Where R⁶ and R⁷ are independently chosen from H, Cl, NO, N-acetyl, benzyl, C1-100 alkyl, C1-100 alkylamine, C1-100 alkyldiamine, C1-100 alkylcarboxylate, C1-100 alkenyl, a C₁₋₁₀₀ alkynyl, or a C₁₋₁₀₀L, where L groups can be independently chosen from but is not limited to arylboronic acids, biotins, polyhistidines comprised from about 2 to 8 amino acids, haptens to which an antibody binds, solid phase supports, oligodeoxynucleotide, Nethylnitrosourea, fluorescein, bromoacetamide, iodoacetamide, DL-α-lipoic acid, acridine, captothesin, pyrene, mitomycin, texas red, anthracene, anthrinilic acid, avidin, DAPI, an oligodeoxynucleotide, isosulfan blue, malachite green, psoralen, ethyl red, 4-(psoraen-8-yloxy)butyrate, tartaric acid, (+)-α-tocopheral. Where p is an integer value ranging from 0 to 12. In the preferred form of the present invention R⁶ and R⁷ are H, and the resulting amine modified polyamide is coupled to an amine reactive molecule in order to generate a bifunction polyamide conjugate. Where the amine reactive molecule is chosen from but not limited to the following: arylboronic acids, biotins, polyhistidines comprised from about 2 to 8 amino acids, haptens to which an antibody binds, solid phase supports, an oligodeoxynucleotide, N-ethylnitrosourea, fluorescein, bromoacetamide, iodoacetamide, DL-a-lipoic acid, acridine, captothesin, pyrene, mitomycin, texas red, anthracene, anthrinilic acid, avidin, DAPI, isosulfan blue, malachite green, psoralen, ethyl red, 4-(psoraen-8-yloxy)-butyrate, tartaric acid, (+)-α-tocopheral.

where X and Y are chosen from the following, N, CH, COH, CCH₃, CNH₂, CCl, CF. a is an integer chosen from values of 0 or 1 b is an integer chosen integer values ranging from 1 to 5. c is an integer value ranging from 2 to 10.

Hereinafter, N-methylpyrrolecarboxamide may be referred to as "Py", N-methylimidazolecarboxamide may be referred to as "Im", γ -aminobutyric acid may referred to as " γ ", β -alanine may be referred to as " β ", glycine may be referred to as "G",

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dimethylaminopropylamide may be referred to as "Dp", and ethylenediaminetetraacetic acid may be referred to as "EDTA":

The preparation and the use of polyamides for binding in the minor groove of double stranded DNA are extensively described in the art. This invention is an improvement of the existing technology that uses 3-hydroxy-N-methylpyrrole to provide carboxamide binding pairs for DNA binding polyamides.

The invention encompasses polyamides having γ -aminobutyric acid or a substituted γ -aminobutyric acid to form a hairpin with a member of each carboxamide pairing on each side of it. Preferably the substituted γ -aminobutyric acid is a chiral substituted γ -aminobutyric acid such as (R)-2,4-diaminobutyric acid. In addition, the polyamides may contain an aliphatic amino acid residue, preferably a β -alanine residue, in place of a Hp or Py carboxamide. The β -alanine residue is represented in formulas as β . The β -alanine residue becomes a member of a carboxamide binding pair. The invention further includes the substitution as a β/β binding pair for non-Im containing binding pair. Thus, binding pairs in addition to the Im/Py, Py/Im, Hp/Py and Py/Hp are Im/ β , β /Im, Py/ β , β /Py, Hp/ β , β /Hp, and β/β .

The polyamides of the invention can have additional moieties attached covalently to the polyamide. Preferably the additional moieties are attached as substituents at the amino terminus of the polyamide, the carboxy terminus of the polyamide, or at a chiral (R)-2,4-diaminobutyric acid residue. Suitable additional moieties include a detectable labeling group such as a dye, biotin or a hapten. Other suitable additional moieties are DNA reactive moieties that provide for sequence specific cleavage of the duplex DNA.

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BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 illustrates the structure of polyamide 1, 2, and 3.

Figure 2 illustrates the pairing of polyamides to DNA base pairs.

Figure 3 illustrates the DNase footprint titration of compounds 2 and 3.

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Figure 4 illustrates a list of the structures of representative Hp containing polyamides.

Figure 5 schematically illustrates a method for the design of eight carboxamide residue hairpin polyamide compounds suitable for recognition of 6-bp 5'-WNNNW-3' sequences in the minor groove of double stranded DNA.

Figure 6 schematically illustrates a method for determining the position of an aromatic amino acid residue that should be replaced with a β-alanine residue in order to enhance the DNA binding properties of certain eight carboxamide residue hairpin polyamide compounds.

Figure 7 schematically illustrates a method for the design of ten carboxamide residue hairpin polyamide compounds suitable for recognition of 7-bp 5'-WNNNNW-3' sequences in the minor groove of double stranded DNA.

Figure 8 schematically illustrates a method for determining the position of an aromatic amino acid residue that should be replaced with a β-alanine residue in order to enhance the DNA binding properties of certain ten carboxamide residue hairpin polyamide compounds.

Figure 9 schematically illustrates a method for determining the position of an additional aromatic amino acid residue that should be replaced with a β-alanine residue in order to enhance the DNA binding properties of certain ten carboxamide residue hairpin polyamide compounds. Figure 10 schematically illustrates a method for the design of twelve carboxamide residue hairpin polyamide compounds suitable for recognition of 8-bp 5'-WNNNW-3' sequences in the minor groove of double stranded DNA.

Figure 11 schematically illustrates a method for determining the position of an aromatic amino acid residue that should be replaced with a β -alanine residue in order to enhance the DNA binding properties of certain twelve carboxamide residue hairpin polyamide compounds.

DETAILED DESCRIPTION OF THE INVENTION

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Within this application, unless otherwise stated, definitions of the terms and illustration of the techniques of this application may be found in any of several well-known references such as: Sambrook, J., et al., Molecular Cloning: A Laboratory Manual, Cold Spring Harbor Laboratory Press (1989); Goeddel, D., ed., Gene Expression Technology, Methods in Enzymology, 185, Academic Press, San Diego, CA (1991); "Guide to Protein Purification" in Deutshcer, M.P., ed., Methods in Enzymology, Academic Press, San Diego, CA (1989); Innis, et al., PCR Protocols: A Guide to Methods and Applications, Academic Press, San Diego, CA (1990); Freshney, R.I., Culture of Animal Cells: A Manual of Basic Technique, 2nd Ed., Alan Liss, Inc. New York, NY (1987); Murray, E.J., ed., Gene Transfer and Expression Protocols, pp. 109-128, The Humana Press Inc., Clifton, NJ and Lewin, B., Genes VI, Oxford University Press, New York (1997).

For the purposes of this application, a promoter is a regulatory sequence of DNA that is involved in the binding of RNA polymerase to initiate transcription of a gene. A gene is a segment of DNA involved in producing a peptide, polypeptide or protein, including the coding region, non-coding regions preceding ("leader") and following ("trailer") the coding region, as well as intervening non-coding sequences ("introns") between individual coding segments ("exons"). Coding refers to the representation of amino acids, start and stop signals in a three base "triplet" code. Promoters are often upstream ("'5 to") the transcription initiation site of the corresponding gene. Other regulatory sequences of DNA in addition to promoters are known, including sequences involved with the binding of transcription factors, including response elements that are the DNA sequences bound by inducible factors. Enhancers comprise yet another group of regulatory sequences of DNA that can increase the utilization of promoters, and can function in either orientation (5'-3' or 3'-5') and in any location (upstream or downstream) relative to the promoter. Preferably, the regulatory sequence has a positive activity, i.e., binding of an endogeneous ligand (e.g. a transcription factor) to the regulatory sequence increases transcription, thereby resulting in increased expression of the corresponding target gene. In such a case, interference with transcription by binding a polyamide to a regulatory sequence would reduce or abolish expression of a gene.

The promoter may also include or be adjacent to a regulatory sequence known in the art as a *silencer*. A silencer sequence generally has a negative regulatory effect on expression of the gene. In such a case, expression of a gene may be increased directly by using a polyamide to prevent binding of a factor to a silencer regulatory sequence or indirectly, by using a polyamide to block transcription of a factor to a silencer regulatory sequence.

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It is to be understood that the polyamides of this invention bind to double stranded DNA in a sequence specific manner. The function of a segment of DNA of a given sequence, such as 5'-TATAAA-3', depends on its position relative to other functional regions in the DNA sequence. In this case, if the sequence 5'-TATAAA-3' on the coding strand of DNA is positioned about 30 base pairs upstream of the transcription start site, the sequence forms part of the promoter region (Lewin, *Genes VI*, pp. 831-835). On the other hand, if the sequence 5'-TATAAA-3' is downstream of the transcription start site in a coding region and in proper

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register with the reading frame, the sequence encodes the tyrosyl and lysyl amino acid residues (Lewin, *Genes VI*, pp. 213-215).

While not being held to one hypothesis, it is believed that the binding of the polyamides of this invention modulate gene expression by altering the binding of DNA binding proteins, such as RNA polymerase, transcription factors, TBF, TFIIIB and other proteins. The effect on gene expression of polyamide binding to a segment of double stranded DNA is believed to be related to the function, e.g., promoter, of that segment of DNA.

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It is to be understood by one skilled in the art that the improved polyamides of the present invention may bind to any of the above-described DNA sequences or any other sequence having a desired effect upon expression of a gene. In addition, U.S. Patent No. 5,578,444 describes numerous promoter targeting sequences from which base pair sequences for targeting an improved polyamide of the present invention may be identified.

It is generally understood by those skilled in the art that the basic structure of DNA in a living cell includes both *major* and a *minor groove*. For the purposes of describing the present invention, the *minor groove* is the narrow groove of DNA as illustrated in common molecular biology references such as Lewin, B., *Genes VI*, Oxford University Press, New York (1997).

To affect gene expression in a cell, which may include causing an increase or a decrease in gene expression, a effective quantity of one or more polyamide is contacted with the cell and internalized by the cell. The cell may be contacted *in vivo* or *in vitro*. Effective extracellular concentrations of polyamides that can modulate gene expression range from about 10 nanomolar to about 1 micromolar. Gottesfeld, J.M., *et al.*, *Nature* 387 202-205 (1997). To determine effective amounts and concentrations of polyamides *in vitro*, a suitable number of cells is plated on tissue culture plates and various quantities of one or more polyamide are added to separate wells. Gene expression following exposure to a polyamide can be monitored in the cells or medium by detecting the amount of the protein gene product present as determined by various techniques utilizing specific antibodies, including ELISA and western blot. Alternatively, gene expression following exposure to a polyamide can be monitored by detecting the amount of messenger RNA present as determined by various techniques, including northern blot and RT-PCR.

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Similarly, to determine effective amounts and concentrations of polyamides for *in vivo* administration, a sample of body tissue or fluid, such as plasma, blood, urine, cerebrospinal fluid, saliva, or biopsy of skin, muscle, liver, brain or other appropriate tissue source is analyzed. Gene expression following exposure to a polyamide can be monitored by detecting the amount of the protein gene product present as determined by various techniques utilizing specific antibodies, including ELISA and western blot. Alternatively, gene expression following exposure to a polyamide can be monitored by the detecting the amount of messenger RNA present as determined by various techniques, including northern blot and RT-PCR.

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The polyamides of this invention may be formulated into diagnostic and therapeutic compositions for *in vivo* or *in vitro* use. Representative methods of formulation may be found in *Remington: The Science and Practice of Pharmacy*, 19th ed., Mack Publishing Co., Easton, PA (1995).

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For *in vivo* use, the polyamides may be incorporated into a physiologically acceptable pharmaceutical composition that is administered to a patient in need of treatment or an animal for medical or research purposes. The polyamide composition comprises pharmaceutically acceptable carriers, excipients, adjuvants, stabilizers, and vehicles. The composition may be in solid, liquid, gel, or aerosol form. The polyamide composition of the present invention may be administered in various dosage forms orally, parentally, by inhalation spray, rectally, or topically. The term parenteral as used herein includes, subcutaneous, intravenous, intramuscular, intrasternal, infusion techniques or intraperitoneally.

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The selection of the precise concentration, composition, and delivery regimen is influenced by, *inter alia*, the specific pharmacological properties of the particular selected compound, the intended use, the nature and severity of the condition being treated or diagnosed, the age, weight, gender, physical condition and mental acuity of the intended recipient as well as the route of administration. Such considerations are within the purview of the skilled artisan. Thus, the dosage regimen may vary widely, but can be determined routinely using standard methods.

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Polyamides of the present invention are also useful for detecting the presence of double stranded DNA of a specific sequence for diagnostic or preparative purposes. The sample containing the double stranded DNA can be contacted by polyamide linked to a solid substrate, thereby isolating DNA comprising a desired sequence. Alternatively, polyamides linked to a suitable detectable marker, such as biotin, a hapten, a radioisotope or a dye molecule, can be contacted by a sample containing double stranded DNA.

The design of bifunctional sequence specific DNA binding molecules requires the integration of two separate entities: recognition and functional activity. Polyamides that specifically bind with subnanomolar affinity to the minor groove of a predetermined sequence of double stranded DNA are linked to a functional molecule, providing the corresponding bifunctional conjugates useful in molecular biology, genomic sequencing, and human medicine. Polyamides of this invention can be conjugated to a variety of functional molecules, which can be independently chosen from but is not limited to arylboronic acids, biotins, polyhistidines comprised from about 2 to 8 amino acids, haptens to which an antibody binds, solid phase supports, oligodeoxynucleotides, N-ethylnitrosourea, bromoacetamide, fluorescein, iodoacetamide, DL-α-lipoic acid, acridine, captothesin, pyrene, mitomycin, texas red, anthracene, anthrinilic acid, avidin, DAPI, isosulfan blue, malachite green, psoralen, ethyl red, 4-(psoraen-8-yloxy)-butyrate, tartaric acid, (+)-α-tocopheral, psoralen, EDTA, methidium, acridine, Ni(II)•Gly-Gly-His, TO, Dansyl, pyrene, N-bromoacetamide, and gold particles. Such bifunctional polyamides are useful for DNA affinity capture, covalent DNA modification. oxidative DNA cleavage, and DNA photocleavage. Such bifunctional polyamides are useful for DNA detection by providing a polyamide linked to a detectable label. Detailed instructions for synthesis of such bifunctional polyamides can be found in copending U.S. provisional application 60/043,444, the teachings of which are incorporated by reference.

DNA complexed to a labeled polyamide can then be determined using the appropriate detection system as is well known to one skilled in the art. For example, DNA associated with a polyamide linked to biotin can be detected by a streptavidin / alkaline phosphatase system.

The present invention also describes a diagnostic system, preferably in kit form, for assaying for the presence of the double stranded DNA sequence bound by the polyamide of this invention in a body sample, such brain tissue, cell suspensions or tissue sections, or body fluid

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samples such as CSF, blood, plasma or serum, where it is desirable to detect the presence, and preferably the amount, of the double stranded DNA sequence bound by the polyamide in the sample according to the diagnostic methods described herein.

The diagnostic system includes, in an amount sufficient to perform at least one assay, a specific polyamide as a separately packaged reagent. Instructions for use of the packaged reagent(s) are also typically included. As used herein, the term "package" refers to a solid matrix or material such as glass, plastic (e.g., polyethylene, polypropylene or polycarbonate), paper, foil and the like capable of holding within fixed limits a polyamide of the present invention. Thus, for example, a package can be a glass vial used to contain milligram quantities of a contemplated polyamide or it can be a microliter plate well to which microgram quantities of a contemplated polyamide have been operatively affixed, i.e., linked so as to be capable of being bound by the target DNA sequence. "Instructions for use" typically include a tangible expression describing the reagent concentration or at least one assay method parameter such as the relative amounts of reagent and sample to be admixed, maintenance time periods for reagent or sample admixtures, temperature, buffer conditions and the like. A diagnostic system of the present invention preferably also includes a detectable label and a detecting or indicating means capable of signaling the binding of the contemplated polyamide of the present invention to the target DNA sequence. As noted above, numerous detectable labels, such as biotin, and detecting or indicating means, such as enzyme-linked (direct or indirect) streptavidin, are well known in the art.

As used herein, "subnanomolar affinity" means binding that is characterized by a dissociation constant, K_d , of less than 1 nM, as measured by DNase I footprint titration. Preferably, polyamides of the present invention are characterized by subnanomolar binding affinity for the identified target DNA sequence. As used herein, the "selectivity" of the binding of a polyamide to a DNA sequence is the ratio of the dissociation constant, K_d , as measured by DNase I footprint titration of binding the polyamide to a mismatch DNA sequence divided by the corresponding dissociation constant of the binding of the polyamide to the identified target DNA sequence. Preferably, polyamides of the present invention are characterized by a selectivity of 5 or greater, more preferably a selectivity of greater that 10.

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The exemplary polyamide that illustrates the compositions and methods of the present invention is polyamide 3 of Figure 1, ImImHpPy-γ-ImPyPyPy-β-Dp. This polyamide was designed according to the method of the present invention to target the identified sequence 5'-WGGTCW-3'. See Table 5, below, Sequence No. 36 and the corresponding sequence of carboxamide binding pairs. Polyamide 3 binds an identified target sequence 5'-TGGTCA-3' with a dissociation constant, as measured by DNase I footprint titration, of 0.48 nM, i.e., with subnanomolar affinity as defined herein (see Table 1, below). The polyamide binds to the mismatch sequence 5'-TGGACA-3' with a dissociation contant of 37 nM, yielding a selectivity, as defined herein, of 77 (Table 1).

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Figure 1 shows representative structures of polyamides. ImImPyPy-γ-ImPyPyPy-β-Dp (1), ImImPyPy-γ-ImHpPyPy-β-Dp (2), and ImImHpPy-γ-ImPyPyPy-β-Dp (3). (Hp = 3-hydroxy-N-methylpyrrole, Im = N-methylimidazole, Py = N-methylpyrrole, β = β-alanine, γ = γ-aminobutyric acid, Dp = Dimethylaminopropylamide). Polyamides were synthesized by solid phase methods using Boc-protected 3-methoxypyrrole, imidazole, and pyrrole aromatic amino acids, cleaved from the support by aminolysis, deprotected with sodium thiophenoxide, and purified by reversed phase HPLC. Baird, E. E. & Dervan, P. B. describes the solid phase synthesis of polyamides containing imidazole and pyrrole amino acids. *J. Am. Chem. Soc.* 118, 6141-6146 (1996); also see PCT US 97/003332. The identity and purity of the polyamides were verified by ¹H NMR, analytical HPLC, and matrix-assisted laser-desorption ionization time-of-flight mass spectrometry (MALDI-TOF MS-monoisotopic): 1 1223.6 (1223.6 calculated), 2 1239.6 (1239.6 calculated); 3 1239.6 (1239.6 calculated).

Figure 2 illustrates binding models for polyamides 1-3 in complex with 5'-TGGTCA-3' and 5'-TGGACA-3' (A \bullet T and T \bullet A in fourth position highlighted). Filled and unfilled circles represent imidazole and pyrrole rings respectively; circles containing an H represent 3-hydroxypyrrole, the curved line connecting the polyamide subunits represents γ -aminobutyric acid, the diamond represents β -alanine, and the + represents the positively charged dimethylaminopropylamide tail group.

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Figure 3 shows quantitative DNase I footprint titration experiments with polyamides 2 and 3 on the 3' ³²P labeled 250-bp pJK6 *EcoRI/PvuII* restriction fragment. Lane 1, intact DNA; lanes 2-11 DNase I digestion products in the presence of 100, 50, 20, 10, 5, 2, 1, 0.5, 0.2, 0.1 nM

polyamide, respectively; lane 12, DNase I digestion products in the absence of polyamide; lane 13, adenine-specific chemical sequencing. Iverson, B. L. & Dervan, P. B. describes an adenine-specific DNA chemical sequencing reaction. *Methods Enzymol.* 15, 7823-7830 (1987). All reactions were done in a total volume of 400 μL. A polyamide stock solution or H₂O was added to an assay buffer containing radiolabeled restriction fragment, with the final solution conditions of 10 mM Tris-HC1, 10 mM KC1, 10 mM MgCl₂, 5 mM CaCl₂, pH 7.0. Solutions were allowed to equilibrate for 4-12 h at 22 °C before initiation of footprinting reactions. Footprinting reactions, separation of cleavage products, and data analysis were carried out as described. White, S., Baird, E. E. & Dervan, P. B. Effects of the A•T/T•A degeneracy of pyrrole-imidazole polyamide recognition in the minor groove of DNA. *Biochemistry 35*, 12532-12537 (1996).

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Figure 4 shows the structure and equilibrium dissociation constant for numerous compounds of the present invention. Polyamides are shown in complex with their respective match site. Filled and unfilled circles represent imidazole (Im) and pyrrole (Py) rings, respectively; circles containing an H represent 3-hydroxypyrrole (Hp), the curved line connecting the polyamide subunits represents γ -aminobutyric acid (γ), the diamond represents β -alanine (β), and the + represents the positively charged dimethylaminopropylamide tail group (Dp). The equilibrium dissociation constants are the average values obtained from three DNase I footprint titration experiments. The standard deviation for each set is less than 15% of the reported number. Assays were carried out in the presence of 10 mM Tris•HCl, 10 mM KCl, 10 mM MgCl₂, and 5 mM CaCl₂ at pH 7.0 and 22°C.

Four-ring polyamide subunits, covalently coupled to form eight-ring hairpin structures, bind specifically to 6-bp target sequences at subnanomolar concentrations. Trauger, J.W., Baird, E. E. & Dervan, P.B. describe the recognition of DNA by designed ligands at subnanomolar concentrations. *Nature* 382, 559-561 (1996); Swalley, S. E., Baird, E. E. & Dervan, P. B. describe the discrimination of 5'-GGGG-3', 5'-GCGC-3', and 5'-GGCC'3' sequences in the minor groove of DNA by eight-ring hairpin polyamides. *J. Am. Chem. Soc.* 119, 6953-6961 (1997). The DNA-binding affinities of three eight-ring hairpin polyamides shown in Figure 1 as compound 1, 2, and 3 containing pairings of Im/Py, Py/Im opposite G•C, C•G and either Py/Py, Hp/Py, or Py/Hp at a common single point opposite T•A and A•T has been determined. Equilibrium dissociation constants (K_d) for ImImPyPy-γ-ImPyPyPy-β-Dp 1, ImImPyPy-γ-ImHpPyPy-β-Dp 2, ImImHpPy-γ-ImPyPyPy-β-Dp 3 of Figure 1 are shown in Table 1. Brenowitz, M., Senear, D. F., Shea, M. A. & Ackers, G. K. describe a quantitative DNase footprint titration method for studying protein-DNA interactions. *Methods Enzymol.* 130, 132-

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181 (1986); The K_d values were determined by quantitative DNase I footprint titration experiments: on a 3' ³²P-labeled 250-bp DNA fragment containing the target sites, 5'-TGGACA-3' and 5'-TGGTCA-3' which differ by a single A•T base pair in the fourth position. The DNase footprint gels are shown in Figure 3.

TAB	LE 1 Equ	ilibrium dissociation cor	nstants'	•
Po	olyamide†	5'-TGGTCA-3'	5'-TGGACA-3'	K _{rel} ‡
1	Ру/Ру	5'-T G G T C A-3' 3'-A C C A G T-5' K _d = 0.077 nM	5'-T G G A C A-3'	2.0
2	Ру/Нр	5'-T G G T C A-3'	5'-T G G A C A-3'	0.06
3	Нр/Ру	5'-T G G T C A-3'	5'-T G G A C A-3'	77

*The reported dissociation constants are the average values obtained from three DNase I footprint titration experiments. The standard deviation for each data set is less than 15% of the reported number. Assays were carried out in the presence of 10 mM Tris*HCl, 10 mM KCl, 10 mM MgCl₂, and 5 mM CaCl₂ at pH 7.0 and 22 °C. †Ring pairing opposite T*A and A*T in the fourth position. ‡Calculated as K_d (5'-TGGACA-3')/ K_d (5'-TGGTC A-3').

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Based on the pairing rules for polyamide-DNA complexes both of these sequences are a match for control polyamide 1 which places a Py/Py pairing opposite

A•T and T•A at both sites. It was determined that polyamide 1 (Py/Py) binds to 5'-TGGTCA-3' and 5'-TGGACA-3' within a factor of 2 ($K_d = 0.077$ or 0.15 nM respectively). In contrast, polyamide 2 (Py/Hp) binds to 5'-TGGTCA-3' and 5'-TGGACA-3' with dissociation constants which differ by a factor of 18 ($K_d = 15$ nM and 0.83 nM respectively). By reversing the pairing in polyamide 3 (Hp/Py) the dissociation constants differ again in the opposite direction by a factor of 77 ($K_D = 0.48$ nM and 37 nM respectively). Control experiments performed on separate DNA fragments; reveal that neither a 5'-TGGGCA-3' or a 5'-TGGCCA-3' site is bound by polyamide 2 or 3 at concentrations ≤ 100 nM, indicating that the Hp/Py and Py/Hp ring pairings do not bind opposite G•C or C•G.

The specificity of polyamides 2 and 3 for sites which differ by a single A•T/T•A base pair results from small chemical changes. Replacing the Py/Py pair in 1 with a Py/Hp pairing as in 2, a single substitution of C3-OH for C3-H, destabilizes interaction with 5'-TGGTCA-3' by 191-fold, a free energy difference of 3.1 kcal mol⁻¹. Interaction of 2 with 5'-TGGACA-3' is destabilized only 6-fold relative to 1, a free energy difference of 1.1 kcal mol⁻¹. Similarly,

replacing the Py/Py pair in 1 with Hp/Py as in 3 destabilizes interaction with 5'-TGGACA-3' by 252-fold, a free energy difference of 3.2 kcal mol⁻¹. Interaction of 3 with 5'TGGTCA-3' is destabilized only 6-fold relative to 1, a free energy difference of 1.0 kcal mol⁻¹.

The polyamides of this invention provide for coded targeting of predetermined DNA sequences with affinity and specificity comparable to sequence-specific DNA binding proteins. Hp, Im, and Py polyamides complete the minor groove recognition code using three aromatic amino acids which combine to form four ring pairings (Im/Py, Py/Im, Hp/Py, and Py/Hp) which complement the four Watson-Crick base pairs, as shown in TABLE 2. There are a possible 240 four base pair sequences which contain at least 1 A•T or T•A base pair and therefore can advantageously use an Hp/Py, or Py/Hp carboxamide binding. Polyamides binding to any of these sequences can be designed in accordance with the code of TABLE 2.

TABLE 2	Pairing co	de for minor	r groove rec	ognition*
Pair	G•C	C•G	T•A	A•T
Im/Py	+	-	-	-
Py/Im	-	+	-	-
Hp/Py	-	-	+	-
Ру/Нр	-		-	. +

^{*} favored (+), disfavored (-)

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For certain G•C rich sequences the affinity of polyamide•DNA complexes may be enhanced by substitution of an Im/ β pair for Im/Py at G•C and β /Im for Py/Im at C•G. At A•T and T•A base pairs, either a Py/ β , β /Py, Hp/ β , β /Hp, and β / β may be used. The alternate aliphatic/aromatic amino acid pairing code is described in Table 3.

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TABLE 3 A pairings*	FABLE 3 Aliphatic / Aromatic substitution for ring pairings*					
Pair	Substitution					
Im/Py	Im/β					
Py/Im	β/lm					
Hp/Py	Py/β, $β/Py$, $Hp/β$, $β/β$					
Ру/Нр	Ρy/β, β/Ρy, β/Ηp, β/β					

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U. S. Patent 5,578,444 describes numerous promoter region targeting sequences from which base pair sequences for targeting a polyamide can be identified.

PCT U.S. 97/003332 describes methods for synthesis of polyamides which are suitable for preparing polyamides of this invention. The use of β -alanine in place of a pyrrole amino acid in the synthetic methods provides aromatic/aliphatic pairing (Im/ β , β /Im, Hp/ β , β /Hp, Py/ β , and β /Py) and aliphatic/aliphatic pairing (β / β) substitution. The use of γ -aminobutyric acid, or a substituted γ -aminobutyric acid such as (R)-2,4 diaminobutyric acid, provides for preferred hairpin turns. The following examples illustrate the synthesis of polyamides of the present invention.

The process of designing a preferred polyamide molecule X₁X₂X₃X₄- γ -X₅X₆X₇X₈ comprising eight aromatic amino acid residues of this invention is shown schematically in Figure 5. The polyamide design process provides a method for designing an eight carboxamide residue molecule comprising four carboxamide binding pairs for detection and binding of a target six base pair 5'-WNNNW-3' sequence in the minor groove of double stranded DNA. The design process identifies an appropriate polyamide ligand for recognition of a predetermined 6-bp, 5'-WNNNW-3' sequence with subnanomolar affinity and >10-fold specificity versus mismatch sites. Trauger, J.W., Baird, E. E. Dervan, P.B. describes the recognition of DNA by designed ligands at subnanomolar concentrations. *Nature* 382, 559-561 (1996).

In order to prepare a polyamide molecule specific for an identified six base pair sequence of double stranded DNA, a user starts the 8-ring polyamide design process that implements the minor groove recognition pairing code summarized in Table 2 above. In the design process a 5'-WNNNW-3' sequence was identified. In a preferred embodiment, the identified sequence was located within a gene promoter. U. S. Patent 5,578,444 describes numerous promoter region targeting sequences from which target six base pair sequences for targeting a polyamide can be identified. The identified sequence was then defined as 5'-WabcdW-3' in a stepwise process wherein a, b, c, and d, were sequentially and independently defined as A, G, C, or T. The structure of the polyamide molecule was then correspondingly defined by sequentially chosing antiparallel carboxamide binding pairs according to the minor groove pairing code summarized in Table 2 above. Thus, if a was G, then X1 was defined as Im, and X8 was defined as Py. If a was C, then X1 was defined as Py, and X8 was defined as Im. If a was T, then X1 was defined

as Hp, and X8 was defined as Py. If a was A, then X_1 was defined as Py, and X8 was defined as Hp.

Similarly, **b** was defined as A, G, C, or T and corresponding carboxamide binding pairs were defined. According to the same rules, if **b** was G, then X₂ was defined as Im, and X₇ was defined as Py. If **b** was C, then X₂ was defined as Py, and X₇ was defined as Im. Likewise, if **b** was T, then X₂ was defined as Hp, and X₇ was defined as Py. If **b** was A, then X₂ was defined as Py, and X₇ was defined as Hp.

The next step was to define c as A, G, C, or T and then define corresponding carboxamide binding pairs. Following the same rules, if c was G, then X3 was defined as Im, and X6 was defined as Py. If c was C, then X3 was defined as Py, and X6 was defined as Im. Similarly, if c was T, then X3 was defined as Hp, and X6 was defined as Py. If c was A, then X3 was defined as Py, and X6 was defined as Hp. Lastly, d was defined as A, G, C, or T and the last corresponding carboxamide binding pair was defined. According to above rules, if d was G, then X4 was defined as Im, and X5 was defined as Py. If d was C, then X4 was defined as Py, and X5 was defined as Hp, and X5 was defined as Py. If d was A, then X4 was defined as Py, and X5 was defined as Py, and X5 was defined as Py.

With all eight carboxamide residues that participate in binding pairs now defined, the designed polyamide X₁X₂X₃X₄-γ-X₅X₆X₇X₈ suitable for binding to the identified sequence was synthesized using known techniques. Baird, E. E. & Dervan, P. B. describes the solid phase synthesis of polyamides containing imidazole and pyrrole amino acids. *J. Am. Chem. Soc.* 118, 6141-6146 (1996); also see PCT US 97/003332.

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The binding affinity of the synthesized polyamide to the identified sequence was determined using a quantitative DNase footprint titration method for studying protein-DNA interactions described by Brenowitz, M., Senear, D. F., Shea, M. A. & Ackers, G. K., *Methods Enzymol.* 130, 132-181 (1986). If the affinity of the synthesized polyamide at the target site was not subnanomolar affinity then adding a β-alanine (process A) was considered in order to optimize the exact positions of the binding pairs of aromatic amino acids. If the affinity of the said polyamide at said target site was subnanomolar affinity then the sequence specificity of the polyamide versus mismatch sequences was determined. If the specificity versus mismatch sites

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was not > 10-fold specificity then adding a β -alanine (process A schematically shown in Figure 6) was considered, in order to optimize the positions of the aromatic amino acids in relationship to the base pairs in the minor groove. Specificity of the polyamide molecule for the target identified sequence versus mismatch sequence sites of greater than 10-fold was considered a successful result of design process.

The 256 polyamide molecules comprising four carboxamide binding pairs that were designed using this method are useful for binding to the 256 target 5'-NNNN-3' core sequences, and are listed in Tables 4-11. A corresponding polyamide molecule was designed for each DNA sequence (1-240) and (G1-G16) using the process outlined above and shown schematically in Figure 5.

If the synthesized polyamide molecule did not bind to the target identified sequence with subnanomolar affinity or if the synthesized polyamide molecule did not exhibit a specificity for the target identified sequence versus mismatch sequence sites of greater than 10-fold, the option of substituting an aliphatic amino acid residues for one of the carboxamide residues was considered. The preferred aliphatic amino acid residue is β -alanine. At least one aliphatic amino acid residue such as a β -alanine residue provided some flexibility to the central portion of the polyamide molecule, acting as a "spring" to permit optimization of the hydrogen bonding between the carboxamide binding pairs and the nucleotide bases of the double stranded DNA.

In general, it was not found to be advantageous to replace either member of the terminal carboxamide binding pair, X_1/X_8 , with β -alanine. Similarly, β -alanine was not substituted for members of the binding pair, X_4/X_5 , adjacent to the γ hairpin residue. β -alanine residues were not substituted for N-methylimidazole residues. The use of β -alanine in place of a pyrrole or 3-hydroxypyrrole amino acid residue provides aromatic/aliphatic pairing (Im/ β , β /Im, Hp/ β , β /Hp, Py/ β , and β /Py) and aliphatic/aliphatic pairing (β/β) substitution.

The method for selecting which pyrrole amino acid to substitute with β -alanine is schematically illustrated in Figure 6. Selective placement of an aliphatic β -alanine (β) residue paired with either a pyrrole (Py), 3-hydroxypyrrole (Hp), or imidazole (Im) aromatic amino acid or another β -alanine residue is found to compensate for sequence composition effects to improve

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recognition and binding of the minor groove of DNA by pyrrole-imidazole polyamides of the present invention. If an all-ring polyamide has been found to have an affinity which is not subnanomolar, or a specificity versus mismatch sequences which is less than 10-fold it may be caused by DNA sequence-composition effects which can be reduced by replacement of an aromatic amino acid with an aliphatic β -alanine residue. In a polyamide molecule that comprises four binding pairs it is only beneficial to place β -alanine in positions X_2 , X_3 , X_6 , and X_7 . No more than two β -alanine residues may be placed within a single hairpin structure. No more than a single β -residue may be placed within each individual polyamide subunit, e.g., if X_2 is replaced with β -alanine, then X_3 cannot be replaced.

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These rules and others were implemented in the method schematically illustrated in Figure 6. This process is suitable for the refinement of the design polyamide comprising four binding pairs that has been designed by the method illustrated in Figure 5, but which lacks subnanomolar affinity or greater than 10-fold specificity at the identified target DNA sequence. As in the basic design method, the designed polyamides are synthesized and the affinity and specificity of binding to the target DNA were determined.

For a given polyamide molecule $X_1X_2X_3X_4$ - γ - $X_5X_6X_7X_8$ there are five possible outcomes for the process of substituting a β -alanine residue for an aromatic amino acid residue. First, there may be no position at which it is possible to add a β -alanine residue; in such case, a better binding affinity or selectivity can be sought in the design and synthesis of a polyamide with five or six carboxamide binding pairs, described below. Second, the process may result in a derivative which contains a single β -alanine substitution (such derivatives are numbered according to the parent numbering scheme such that a single β -derivative of compound 5 would be called 5 β), which is sufficient to produce subnanomolar binding affinity and >10-fold specificity, and at which point the process is deemed complete.

Third, the process of Figure 5 may result in a polyamide which contains a single β alanine substitution which is not sufficient to produce subnanomolar binding affinity and >10fold specificity, but where there are no additional positions in which it is possible to substitute a β -alanine residue, and in such a case a polyamide with five or six carboxamide binding pairs,
should be designed and synthesized, as described below. Fourth, the process of Figure 5 may

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result in a polyamide that contains a single β -alanine substitution that is not sufficient to produce subnanomolar binding affinity and >10-fold specificity, but where there is an additional position for β -alanine substitution that does produce a polyamide with the criterion level of affinity and selectivity and therefore the design process is deemed complete. Polyamides that were designed by the process that produces polyamide molecules that contain two β -alanine residues are labeled $\beta 2$ in Tables 12-19.

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A fifth possibility is that substitution at a second position by the method illustrated in Figure 6 with a second β -alanine residue is not sufficient to produce a polyamide having the subnanomolar binding affinity and >10-fold specificity, and a polyamide with five or six carboxamide binding pairs, should be designed and synthesized, as described below. Tables 12-19 list polyamides corresponding to sequences 1-240 and G1-G16 which contain either one or two β -alanine residues.

		TABLE 4: 8-ring Hairpin Polyamide	es for recognition of 6-bp 5'-WGWNNW-3'
		DNA sequence	aromatic amino acid sequence
	1)	5'-W G T T T W-3'	ІмНрНрНр-ү-РуРуРуРу
5	2)	5'-W G T T A W-3'	ІмНрНрРу-ү-НрРуРуРу
	3)	5'-W G T T G W-3'	ImHpHpIm-7-PyPyPyPy
	4)	5'-W G T T C W-3'	ІшНрНрРу-ү-ІшРуРуРу
	5)	5'-W G T A T W-3'	ІтнрРунр-ү-РунрРуРу
	6)	5'-W G T A A W-3'	ІмнрРуРу-ү-нрнрРуРу
10	7)	5'-W G T A G W-3'	ІтнрРуІт-ү-РунрРуРу
	8)	5'-W G T A C W-3'	ІмНрРуРу-ү-ІмНрРуРу
	9)	5'-W G T G T W-3'	ІтнрІтнр-ү-РуРуРуРу
	10)	5'-W G T G A W-3'	ІтнрІтРу-ү-НрРуРуРу
	11)	5'-W G T G G W-3'	ImHpImIm-ү-РуРуРуРу
15	12)	5'-W G T G C W-3'	ImHpImPy-γ-ImPyPyPy
	13)	5'-W G T C T W-3'	ІшНрРуНр-ү-РуІшРуРу
	14)	5'-W G T C A W-3'	ІтнрРуРу-ү-НрІтРуРу
	15)	5'-W G T C G W-3'	ImHpPyIm-y-PyImPyPy
	16)	5'-W G T C C W-3'	ImHpPyPy-γ-ImImPyPy
20	17)	5'-W G A T T W-3'	ІшРуНрНр-γ-РуРуНрРу
	18)	5'-W G A T A W-3'	ІmРуНpРy-γ-HpРуНpРy
	19)	5'-W G A T G W-3'	ІтРуНрІт-ү-РуРуНрРу
	20)	5'-W G A T C W-3'	ІтРуНрРу-ү-ІтРуНрРу
	21)	5'-W G A A T W-3'	ІмРуРуНр-ү-РуНрНрРу
25	22)	5'-W G A A A W-3'	ІшБУБУБУ-7-НФНФНФБУ
	23)	5'-W G A A G W-3'	ІшБАБА ТАТА ТАТА ТАТА ТАТА ТАТА ТАТА ТАТА
	24)	5'-W G A A C W-3'	ІмРуРуРу-ү-ІмНрНрРу
	25)	5'-W G A G T W-3'	ІмРуІмНр-ү-РуРуНрРу
	26)	5'-W G A G A W-3'	${\tt ImPyImPy-\gamma-HpPyHpPy}$
30	27)	5'-W G A G G W-3'	ImPyImIm-γ-PyPyHpPy
	28)	5'-W G A G C W-3'	ImPyImPy-7-ImPyHpPy
	29)	5'-W G A C T W-3'	ImPyPyHp-7-PyImHpPy
	30)	5'-W G A C A W-3'	${\tt ImPyPyPy-\gamma-HpImHpPy}$
	31)	5'-W G A C G W-3'	ImPyPyIm-7-PyImHpPy
35	32)	5'-W G A C C W-3'	ImPyPyPy-y-ImImHpPy

 	DNA sequence	aromatic amino acid sequence
33)	5'-W G G T T W-3'	ІтІтрнр-ү-Руруруру
34)	5'-W G G T A W-3'	ІтІтрРу-у-НрРуРуРу
35)	5'-W G G T G W-3'	ImImHpIm-γ-PyPyPyPy
36)	5'-W G G T C W-3'	ІтІт Іт Іт
37)	5'-W G G A T W-3'	ІтІтРунр-ү-РунрРуРу
38)	5'-W G G A A W-3'	ІтПтРуРу-ү-НрНрРуРу
39)	5'-W G G A G W-3'	ІтітРуіт-ү-РуНрРуРу
40)	5'-W G G A C W-3'	ІшІшБАБА І І І І І І І І І І І І І І І І І І
41)	5'-W G G G T W-3'	ІтІштр-ү-РуРуРуРу
42)	5'-W G G G A W-3'	ІтІпІтРу-ү-НрРуРуРу
43)	5'-W G G C T W-3'	ImImPyHp-γ-PyImPyPy
44)	5'-W G G C A W-3'	ІтшРуРу-ү-НрІтРуРу
45)	5'-W G C T T W-3'	ІтРуНрНр-ү-РуРуІтРу
46)	5'-W G C T A W-3'	ІтРуНрРу-ү-НрРуІтРу
47)	5'-W G C T G W-3'	ImPyHpIm-γ-PyPyImPy
48)	5'-W G C T C W-3'	ImPyHpPy-γ-ImPyImPy
49)	5'-W G C A T W-3'	ImРуРуНр-γ-РуНр I mРу
50)	5'-W G C A A W-3'	ІтРуРуРу-ү-НрНрІтРу
51)	5'-W G C A G W-3'	ImPyPyIm-γ-PyHpImPy
52)	5'-W G C A C W-3'	ІтРуРуРу-ү-ІтНрІтРу
53)	5'-W G C G T W-3'	ImPyImHp-γ-PyPyImPy
54)	5'-W G C G A W-3'	ImPyImPy-γ-HpPyImPy
55)	5'-W G C C T W-3'	ImPyPyHp-γ-PyImImPy
56)	5'-W G C C A W-3'	ImPyPyPy-γ-HpImImPy
G1)	5'-W G G G G W-3'	ImImImIm-γ-РуРуРуРу
G2)	5'-W G G G C W-3'	ImImImPy-y-ImPyPyPy
G3)	5'-W G G C G W-3'	ImImPyIm-y-PyImPyPy
G4)	5'-W G G C C W-3'	ImImPyPy-7-ImImPyPy
G5)	5'-W G C G G W-3'	ImPyImIm-y-PyPyImPy
G6)	5'-W G C G C W-3'	ImPyImPy-γ-ImPyImPy
G7)	5'-W G C C G W-3'	ImPyPyIm-y-PyImImPy

_		DNA sequence	s for recognition of 6-bp 5'-WTWNNW-3' aromatic amino acid sequence
	57)	5'-W T T T T W-3'	
	58)	5'-W T T T A W-3'	НрНрНрНр-ү-РуРуРуРу
			НрНрНрРу-ү-НрРуРуРу
	59)	5'-W T T T G W-3'	НрНрНрІт-ү-РуРуРуРу
	60)	5'-W T T T C W-3'	НрНрНрРу-ү-ІтРуРуРу
	61)	5'-W T T A T W-3'	НрНрРуНр-ү-РуНрРуРу
	62)	5'-W T T A A W-3'	НрНрРуРу-ү-НрНрРуРу
	63)	5'-W T T A G W-3'	НрНрРуІm-γ-РуНрРуРу
	64)	5'-W T T A C W-3'	НрНрРуРу-ү-ІмНрРуРу
	65)	5'-W T T G T W-3'	НрНрІтНр-ү-РуРуРуРу
	66)	5'-W T T G A W-3'	НрНрІmРу-γ-НрРуРуРу
	67)	5'-W T T G G W-3'	HpHpImIm-y-PyPyPyPy
	68)	5'-W T T G C W-3'	${\tt HpHpImPy-\gamma-ImPyPyPy}$
	69)	5'-W T T C T W-3'	НрНрРуНр-ү-РуІтРуРу
	70)	5'-W T T C A W-3'	НрНрРуРу-ү-НрІмРуРу
	71)	5'-W T T C G W-3'	HpHpPyIm-γ-PyImPyPy
	72)	5'-W T T C C W-3'	HpHpPyPy-y-ImImPyPy
	73)	5'-W T A T T W-3'	НрРуНрНр-ү-РуРуНрРу
	74)	5'-W T A T A W-3'	НрРуНрРу-ү-НрРуНрРу
	75)	5'-W T A T G W-3'	НрРуНрІт-ү-РуРуНрРу
	76)	5'-W T A T C W-3'	НрРуНрРу-ү-ІтРуНрРу
	77)	5'-W T A A T W-3'	НрРуРуНр-ү-РуНрНрРу
	78)	5'-W T A A A W-3'	нрРуРуРу-ү-нрнрРРу
	79)	5'-W T A A G W-3'	НрРуРуІт-ү-РуНрНрРу
	80)	5'-W T A A C W-3'	НрРуРуРу-ү-ІмНрНрРу
	81)	5'-W T A G T W-3'	НрРуІмНр-ү-РуРуНрРу
	82)	5'-W T A G A W-3'	НрРуІмРу-ү-НрРуНрРу
	83)	5'-W T A G G W-3'	НрРуІшІш-ү-РуРуНрРу
	84)	5'-W T A G C W-3'	НрРуІтРу-ү-ІтРуНрРу
	85)	5'-W T A C T W-3'	НрРуРуНр-ү-РуІмНрРу
	86)	5'-W T A C A W-3'	НpРyРyРy-ү-НpІmНpРy
	87)	5'-W T A C G W-3'	HpPyPyIm-y-PyImHpPy
	88)	5'-W T A C C W-3'	HpРуРуРу-γ-ImImHpРу

	TABLE 7: 8-ring Hairpin Polyamid		des for recognition of 6-bp 5'-WTSNNW-3'	
_		DNA sequence	aromatic amino acid sequence	
	89)	5'-W T G T T W-3'	НрІмНрНр-ү-РуРуРуРу	
	90)	5'-W T G T A W-3'	НрІмНрРу-ү-НрРуРуРу	
	91)	5'-W T G T G W-3'	НрІтНрІт-ү-РуРуРуРу	
	92)	5'-W T G T C W-3'	НрІмНрРу-ү-ІмРуРуРу	
	93)	5'-W T G A T W-3'	НрІмРуНр-ү-РуНрРуРу	
	94)	5'-W T G A A W-3'	НрІтРуРу-ү-НрНрРуРу	
	95)	5'-W T G A G W-3'	НрІтРУІт-ү-РуНрРУРУ	
	96)	5'-W T G A C W-3'	НрІмРуРу-ү-ІмНрРуРу	
	97)	5'-W T G G T W-3'	НрІмІмНр-ү-РуРуРу	
	98)	5'-W T G G A W-3'	НрІтІтРу-ү-НрРуРуРу	
	99)	5'-W T G C T W-3'	НрІтРунр-ү-РуІтРуРу	
	100)	5'-W T G C A W-3'	НрІтРуРу-ү-НрІтРуРу	
	101)	5'-W T G G G W-3'	HpImImIm-y-PyPyPyPy	
	102)	5'-W T G G C W-3'	HpImImPy-γ-ImPyPyPy	
	103)	5'-W T G C G W-3'	HpImPyIm-γ-PyImPyPy	
	104)	5'-W T G C C W-3'	НрІтРуРу-ү-ІтТтРуРу	
	105)	5'-W T C T T W-3'	НрРунрнр-ү-РуРу1тРу	
	106)	5'-W T C T A W-3'	НрРунрРу-ү-нрРуІтРу	
	107)	5'-W T C T G W-3'	НрРуНрІш-ү-РуРуІшРу	
	108)	5'-W T C T C W-3'	НрРуНрРу-ү-ІмРуІмРу	
	109)	5'-W T C A T W-3'	НрРуРуНр-ү-РуНрІмРу	
	110)	5'-W T C A A W-3'	НрРуРуРу-ү-нрнрімРу	
	111)	5'-W T C A G W-3'	НрРуРуІт-ү-РуНрІтРу	
	112)	5'-W T C A C W-3'	НрРуРуРу-у-ІмНрІмРу	
	113)	5'-W T C G T W-3'	НрРуІтНр-ү-РуРуІтРу	
	114)	5'-W T C G A W-3'	НрРуІтРу-ү-НрРуІтРу	
	115)	5'-W T C C T W-3'	НрРуРуНр-ү-РуImImРу	
	116)	5'-W T C C A W-3'	НрРуРуРу-ү-НрішімРу	
	117)	5'-W T C G G W-3'	HpPyImIm-y-PyPyImPy	
	118)	5'-W T C G C W-3'	HpPyImPy-y-ImPyImPy	
	119)	5'-W T C C G W-3'	HpPyPyIm-y-PyImImPy	
	120)	5'-W T C C C W-3'	HpPyPyPy-y-ImImImPy	

	DNA sequence	aromatic amino acid sequence
121)	5'-W A T T T W-3'	Рунрнрнр-ү-РуРуРунр
122)	5'-W A T T A W-3'	РунрнрРу-ү-нрРуРунр
123)	5'-W A T T G W-3'	РуНрНрІт-ү-РуРуРуНр
124)	5'-W A T T C W-3'	РунрнрРу-ү-ІмРуРунр
125)	5'-W A T A T W-3'	РунрРунр-ү-РунрРунр
126)	5'-W A T A A W-3'	РунрРуРу-ү-нрнрРунр
127)	5'-W A T A G W-3'	РуНрРуІт-ү-РуНрРуНр
128)	5'-W A T A C W-3'	РуНрРуРу-ү-ІмНрРуНр
129)	5'-W A T G T W-3'	РуНрІтНр-ү-РуРуРуНр
130)	5'-W A T G A W-3'	РуНрІтРу-ү-НрРуРуНр
131)	5'-W A T G G W-3'	PyHpImIm-y-PyPyPyHp
132)	5'-W A T G C W-3'	РунрімРу-ү-імРуРунр
133)	5'-W A T C T W-3'	РуНрРуНр-ү-РуІтРуНр
134)	5'-W A T C A W-3'	РуНрРуРу-ү-НрІтРуНр
135)	5'-W A T C G W-3'	PyHpPyIm-y-PyImPyHp
136)	5'-W A T C C W-3'	РуНрРуРу-ү-ІтІтРуНр
137)	5'-W A A T T W-3'	РуРуНрНр-ү-РуРуНрНр
138)	5'-W A A T A W-3'	РуРуНрРу-ү-НрРуНрНр
139)	5'-W A A T G W-3'	РуРуНрІт-ү-РуРуНрНр
140)	5'-W A A T C W-3'	РуРуНрРу-ү-ІmРуНрНр
141)	5'-W A A A T W-3'	РуРуРуНр-ү-РуНрНрНр
142)	5'-W A A A A W-3'	РуРуРуРу-ү-НрНрНрНр
143)	5'-W A A A G W-3'	РуРуРуІт-ү-РуНрНрНр
144)	5'-W A A A C W-3'	РуРуРуРу-ү-ІтНрНрНр
145)	5'-W A A G T W-3'	РуРуІтНр-ү-РуРуНрНр
146)	5'-W A A G A W-3'	PyPyImPy-y-HpPyHpHp
147)	5'-W A A G G W-3'	PyPyImIm-γ-PyPyHpHp
148)	5'-W A A G C W-3'	РуРуІтРу-ү-ІтРуНрНр
149)	5'-W A A C T W-3'	РуРуРуНр-ү-РуІтНрНр
150)	5'-W A A C A W-3'	РуРуРуРу-ү-НрІтНрНр
151)	5'-W A A C G W-3'	PyPyPyIm-y-PyImHpHp
52)	5'-W A A C C W-3'	РуРуРуРу-ү-ІтІт

-	TABLE 9: 8-ring Hairpin Polyami		nides for recognition of 6-bp 5'-WASNNW-3'	
=		DNA sequence	aromatic amino acid sequence	
	153)	5'-W A G T T W-3'	РуІмНрНр-ү-РуРуРуНр	
5	154)	5'-W A G T A W-3'	РуІшНрРу-ү-НрРуРуНр	
	155)	5'-W A G T G W-3'	РуІтНрІт-ү-РуРуРуНр	
	156)	5'-W A G T C W-3'	РуІмНрРу-ү-ІмРуРуНр	
	157)	5'-W A G A T W-3'	РуІтРуНр-ү-РуНрРуНр	
	158)	5'-W A G A A W-3'	РуІтРуРу-ү-НрНрРуНр	
10	159)	5'-W A G A G W-3'	РуІтРуІт-ү-РуНрРуНр	
	160)	5'-W A G A C W-3'	PyImPyPy-γ-ImHpPyHp	
	161)	5'-W A G G T W-3'	РуІтІтр-ү-РуРуРуНр	
	162)	5'-W A G G A W-3'	РуІтІтРу-ү-НрРуРуНр	
	163)	5'-W A G C T W-3'	РуІтРуНр-ү-РуІтРуНр	
15	164)	5'-W A G C A W-3'	РуІmРуРу-γ-НрІmРуНр	
	165)	5'-W A G G G W-3'	РуІтІтт-ү-РуруруНр	
	166)	5'-W A G G C W-3'	РуІтІтРу-ү-ІтРуРуНр	
	167)	5'-W A G C G W-3'	PyImPyIm-γ-PyImPyHp	
	168)	5'-W A G C C W-3'	РуІмРуРу-ү-ІмІмРуНр	
20	169)	5'-W A C T T W-3'	РуРуНрНр-ү-РуРуІтНр	
	170)	5'-W A C T A W-3'	РуРунрРу-ү-нрРуІтнр	
	171)	5'-W A C T G W-3'	РуРуНрІт-ү-РуРуІтНр	
	172)	5'-W A C T C W-3'	РуРуНрРу-ү-ІmРуІmНр	
	173)	5'-W A C A T W-3'	РуРуРуНр-ү-РуНрІтНр	
25	174)	5'-W A C A A W-3'	РуРуРуРу-ү-НрНрІтНр	
	175)	5'-W A C A G W-3'	РуРуРуІт-ү-РуНрІтНр	
	176)	5'-W A C A C W-3'	PyPyPyPy-y-ImHpImHp	
	177)	5'-W A C G T W-3'	РуРуІмНр-ү-РуРуІмНр	
	178)	5'-W A C G A W-3'	PyPyImPy-7-HpPyImHp	
30	179)	5'-W A C C T W-3'	$PyPyPyHp-\gamma-PyImImHp$	
	180)	5'-W A C C A W-3'	PyPyPyPy-7-HpImImHp	
	181)	5'-W A C G G W-3'	PyPyImIm-y-PyPyImHp	
	182)	5'-W A C G C W-3'	PyPyImPy-y-ImPyImHp	
	183)	5'-W A C C G W-3'	PyPyPyIm-y-PyImImHp	
35	184)	5'-W A C C C W-3!	PyPyPyPy-y-ImImImHp	

	DNA sequence	aromatic amino acid sequence
185)	5'-W C T T T W-3'	Рунрнрнр-ү-РуРуРуІт
186)	5'-W C T T A W-3'	Рунрнрру-ү-нрРуРуІт
187)	5'-W C T T G W-3'	PyHpHpIm-γ-PyPyPyIm
188)	5'-W C T T C W-3'	РуНрНрРу-ү-ІтРуРуІт
189)	5'-W C T A T W-3'	РунрРунр-ү-РунрРуІт
190)	5'-W C T A A W-3'	РуНрРуРу-ү-НрНрРуІт
191)	5'-W C T A G W-3'	PyHpPyIm-γ-PyHpPyIm
192)	5'-W C T A C W-3'	РуНрРуРу-ү-ІтНрРуІт
193)	5'-W C T G T W-3'	РуНрІмНр-ү-РуРуРуІм
194)	5'-W C T G A W-3'	РуНрІтРу-ү-НрРуРуІт
195)	5'-W C T G G W-3'	PyHpImIm-y-PyPyPyIm
196)	5'-W C T G C W-3'	PyHpImPy-y-ImPyPyIm
197)	5'-W C T C T W-3'	РуНрРуНр-ү-РуІтРуІт
198)	5'-W C T C A W-3'	РуНрРуРу-ү-НрІтРуІт
199)	5'-W C T C G W-3'	PyHpPyIm-y-PyImPyIm
200)	5'-W C T C C W-3'	PyHpPyPy-y-ImImPyIm
201)	5'-W C A T T W-3'	РуРуНрНр-ү-РуРуНрІm
202)	5'-W C A T A W-3'	РуРуНрРу-ү-НрРуНрІт
203)	5'-W C A T G W-3'	РуРуНрІт-ү-РуРуНрІт
204)	5'-W C A T C W-3'	РуРуНрРу-ү-ІтРуНрІт
205)	5'-W C A A T W-3'	РуРуРуНр-ү-РуНрНрІт
206)	5'-W C A A A W-3'	РуРуРуРу-ү-НрНрНрІт
207)	5'-W C A A G W-3'	Ру ^р уРуІт-ү-РуНрНрІт
208)	5'-W C A A C W-3'	РуРуРуРу-ү-ІmНрНрІm
209)	5'-W C A G T W-3'	РуРуІтНр-ү-РуРуНрІт
210)	5'-W C A G A W-3'	РуРуІтРу-ү-НрРуНрІт
211)	5'-W C A G G W-3'	РуРуІтіт-ү-РуРуНріт
212)	5'-W C A G C W-3'	PyPyImPy-γ-ImPyHpIm
213)	5'-W C A C T W-3'	РуРуРуНр-ү-РуІтНрІт
214)	5'-W C A C A W-3'	РуРуРуРу-ү-НрІтНрІт
215	5'-W C A C G W-3'	PyPyPyIm-y-PyImHpIm
216	5'-W C A C C W-3'	PyPyPyPy-7-ImImHpIm

	DNA sequence	mides for recognition of 6-bp 5'-WCSNNW-3' aromatic amino acid sequence	
-	217) 5'-W C G T T W-3'	РуІтнрнр-ү-РуРуРуІт	
	218) 5'-W C G T A W-3'	PyImHpPy-y-HpPyPyIm	
	219) 5'-W C G T G W-3'	PyImHpIm-y-PyPyPyIm	
	220) 5'-W C G T C W-3'	PyImHpPy-y-ImPyPyIm	
	221) 5'-W C G A T W-3'	РуІтРунр-ү-РунрРуіт	
	222) 5'-W C G A A W-3'	РуІтРуРу-ү-НрНрРуІт	
	223) 5'-W C G A G W-3'	PyImPyIm-γ-PyHpPyIm	
	224) 5'-W C G A C W-3'	PyImPyPy-γ-ImHpPyIm	
	225) 5'-W C G G T W-3'	PyImImHp-y-PyPyPyIm	
	226) 5'-W C G G A W-3'	PyImImPy-γ-HpPyPyIm	
	227) 5'-W C G C T W-3'	PyImPyHp-γ-PyImPyIm	
	228) 5'-W C G C A W-3'	PyImPyPy-7-HpImPyIm	
	229) 5'-W C C T T W-3'	РуРуНрНр-ү-РуРуІтІт	
	230) 5'-W C C T A W-3'	РуРуНрРу-ү-НрРуІтІт	
	231) 5'-W C C T G W-3'	PyPyHpIm-γ-PyPyImIm	
	232) 5'-W C C T C W-3'	PyPyHpPy-γ-ImPyImIm	
	233) 5'-W C C A T W-3'	∵ РуРуРуНр-γ-РуНрІшІш	
	234) 5'-W C C A A W-3'	РуРуРуРу-ү-НрНрІтІт	
	235) 5'-W C C A G W-3'	PyPyPyIm-7~PyHpImIm	
	236) 5'-W C C A C W-3'	PyPyPyPy-y-ImHpImIm	
	237) 5'-W C C G T W-3'	PyPyImHp-7-PyPyImIm	
	238) 5'-W C C G A W-3'	PyPyImPy-7-HpPyImIm	
	239) 5'-W C C C T W-3'	PyPyHp-γ-PyImImIm	
	240) 5'-W C C C A W-3'	PyPyPyPy-y-HpImImIm	
	G9) 5'-W C G G G W-3'	PyImImIm-y-PyPyPyIm	
	G10) 5'-W C G G C W-3'	PyImImPy-7-ImPyPyIm	
	G11) 5'-W C G C G W-3'	PyImPyIm-y-PyImPyIm	
	G12) 5'-W C G C C W-3'	PyImPyPy-7-ImImPyIm	
	G13) 5'-W C C G G W-3'	PyPyImIm-y-PyPyImIm	
	G14) 5'-W C C G C W-3'	PyPyImPy-y-ImPyImIm	
	G15) 5'-W C C C G W-3'	PyPyPyIm-y-PyImImIm	
	G16) 5'-W C C C C W-3'	PyPyPyPy-y-ImImImIm	

_		TABLE 12: 8-ring Hairpin Polyamid with β-substitutions included.	des for recognition of 6-bp 5'-WGWNNW-3'	
_		DNA sequence	aromatic amino acid sequence	
	3β)	5'-W G T T G W-3'	ІmHp-β-Іm-γ-РуРуРуРу	
5	7β)	5'-W G T A G W-3'	Ітнр-β-Іт-ү-РунрРуРу	
	9β)	5'-W G T G T W-3'	${\tt Im-\beta-ImHp-\gamma-PyPyPyPy}$	
	10β)	5'-W G T G A W-3'	${\tt Im-}\beta\hbox{-}{\tt ImPy-}\gamma\hbox{-}{\tt HpPyPyPy}$	
	11β)	5'-W G T G G W-3'	${\tt Im-\beta-ImIm-\gamma-PyPyPyPy}$	
	12β)	5'-W G T G C W-3'	Im-β-ImPy-γ-ImPyPyPy	
10	15β)	5'-W G T C G W-3'	ImHp-β-Im-γ-PyImPyPy	
	19β)	5'-W G A T G W-3'	ІтРу-β-Іт-ү-РуРуНрРу	
	23β)	5'-W G A A G W-3'	Ітру-β-Іт-ү-РуНрНрРу	
	25β)	5'-W G A G T W-3'	${\tt Im-\beta-ImHp-\gamma-PyPyHpPy}$	
	26 β)	5'-W G A G A W-3'	${\tt Im-\beta-ImPy-\gamma-HpPyHpPy}$	
15	27β)	5'-W G A G G W-3'	${\tt Im-\beta-ImIm-\gamma-PyPyHpPy}$	
	28β)	5'-W G A G C W-3'	${\tt Im-\beta-ImPy-\gamma-ImPyHpPy}$	
	31β)	5'-W G A C G W-3'	${\tt ImPy-\beta-Im-\gamma-PyImHpPy}$	

	TABLE 13: 8	B-ring Hairpin Polyamides for recognition of	f 6-bp 5'-WGSNNW-3' with β-substitutions included.
		DNA sequence	aromatic amino acid sequence
	35β)	5'-W G G T G W-3'	ImIm-β-Im-γ-РуРуРуРу
5	39β)	5'-W G G A G W-3'	${\tt ImIm-\beta-Im-\gamma-PyHpPyPy}$
	45 β)	5'-W G C T T W-3'	$ImPyHpHp-\gamma-Py-\beta-ImPy$
	46 β)	5'-W G C T A W-3'	${\tt ImPyHpPy-\gamma-Hp-\beta-ImPy}$
	47β)	5'-W G C T G W-3'	${\tt ImPyHpIm-\gamma-Py-\beta-ImPy}$
	47β2)	5'-W G C T G W-3'	${\tt ImPy-\beta-Im-\gamma-Py-\beta-ImPy}$
10	48 β)	5'-W G C T C W-3'	${\tt ImPyHpPy-\gamma-Im-\beta-ImPy}$
	49β)	5'-W G C A T W-3'	${\tt ImPyPyHp-\gamma-Py-\beta-ImPy}$
	50β)	5'-W G C A A W-3'	$ImPyPyPy-\gamma-Hp-\beta-ImPy$
	51β)	5'-W G C A G W-3'	ImPyPyIm-y-Py-β-ImPy
	51 β2)	5'-W G C A G W-3'	${\tt ImPy-\beta-Im-\gamma-Py-\beta-ImPy}$
15	52β)	5'-W G C A C W-3'	ImPyPyPy-γ-1m-β-1mPy
	53β)	5'-W G C G T W-3'	${\tt ImPyImHp-\gamma-Py-\beta-ImPy}$
	53β2)	5'-W G C G T W-3'	${\tt Im}$ - ${\tt \beta}$ - ${\tt ImHp}$ - ${\tt \gamma}$ - ${\tt Py}$ - ${\tt \beta}$ - ${\tt ImPy}$
	54β)	5'-W G C G A W-3'	ImPyImPy-γ-Hp-β-ImPy
	54 β2)	5'-W G C G A W-3'	${\tt Im} extsf{-}eta extsf{-}{\tt ImPy} extsf{-}\gamma extsf{-}{\tt ImPy}$
20	G 3β)	5'-W G G C G W-3'	ImIm-β-Im-γ-РуImРуРу
	G 5β)	5'-W G C G G W-3'	ImPyImIm-γ-Py-β-ImPy
	G 5β2)	5'-W G C G G W-3'	Im-β-ImIm-γ-Ру-β-ImPy
	G6 β)	5'-W G C G C W-3'	ImPyImPy-7-Im-6-ImPy
	G 6β2)	5'-W G C G C W-3'	Im-β-ImPy-γ-Im-β-ImPy
25	G 7β)	5'-W G C C G W-3'	ImPy-β-Im-γ-PyImImPy

	TABLE 14: 8-ring Hairpin Polyamides for recognit		nition of 6-bp 5'-WTWNNW-3' with β-substitutions included.	
		DNA sequence	aromatic amino acid sequence	
	59 β)	5'-W T T T G W-3'	НрНр-β-Іm-γ-РуРуРуРу	
5	63 β)	5'-W T T A G W-3'	$HpHp-\beta-Im-\gamma-PyHpPyPy$	
	65β)	5'-W T T G T W-3'	${\tt Hp} extsf{-}{f \beta} extsf{-}{\tt Im}{\tt Hp} extsf{-}{f \gamma} extsf{-}{\tt PyPyPyPy}$	
	66β)	5'-W T T G A W-3'	${\tt Hp}$ - ${\tt \beta}$ - ${\tt ImPy}$ - ${\tt \gamma}$ - ${\tt HpPyPyPyPy}$	
	67β)	5'-W T T G G W-3'	$ exttt{Hp-}eta exttt{-ImIm-}\gamma exttt{-PyPyPyPy}$	
	68β)	5'-W T T G C W-3'	${\tt Hp}$ - ${\tt \beta}$ - ${\tt ImPy}$ - ${\tt \gamma}$ - ${\tt ImPy}$ - ${\tt Py}$ - ${\tt YP}$	
10	71β)	5'-W T T C G W-3'	${\tt HpHp-\beta-Im-\gamma-PyImPyPy}$	
	75β)	5'-W T A T G W-3'	НрРу-β-Im-γ-РуРуНрРу	
	79β)	5'-W T A A G W-3'	НрРу-β-Іm-γ-РуНрНрРу	
	81 β)	5'-W T A G T W-3'	${ t Hp} - {eta} - { t Im} { t Hp} - {\gamma} - { t Py} { t Py} { t Py} { t Py}$	
	82 β)	5'-W T A G A W-3'	${ t Hp} - {eta} - { t ImPy} - {\gamma} - { t HpPyHpPy}$	
15	83β)	5'-W T A G G W-3'	${\tt Hp-\beta-ImIm-\gamma-PyPyHpPy}$	
	84 β)	5'-W T A G C W-3'	${\tt Hp-\beta-ImPy-\gamma-ImPyHpPy}$	
	87β)	5'-W T A C G W-3'	$ exttt{HpPy-}eta exttt{-Im-}\gamma exttt{-PyImHpPy}$	

Solution Part Pa	,	TABLE 15: 8-ring Hairpin Polyamides for recog	nition of 6-bp 5'-WTSNNW-3' with β-substitutions included.
5 95β) 5'-W T G A G W-3' HpIm-β-Im-γ-PyHpPyPy 103β) 5'-W T G C G W-3' HpIm-β-Im-γ-PyImPyPy 105β) 5'-W T C T T W-3' HpPyHpHp-γ-Py-β-ImPy 106β) 5'-W T C T G W-3' HpPyHpHp-γ-Py-β-ImPy 107β2 5'-W T C T G W-3' HpPyHpPy-γ-Hp-β-ImPy 108β) 5'-W T C T C W-3' HpPyPyPy-γ-Im-β-ImPy 109β) 5'-W T C A T W-3' HpPyPyPy-γ-Im-β-ImPy 110β) 5'-W T C A G W-3' HpPyPyPy-γ-Hp-β-ImPy 111β) 5'-W T C A G W-3' HpPyPyPy-γ-Hp-β-ImPy 111β2 5'-W T C A G W-3' HpPyPyPy-γ-Im-β-ImPy 113β3 5'-W T C G T W-3' HpPyPyPy-γ-Im-β-ImPy 113β2 5'-W T C G T W-3' HpPyImPy-γ-Py-β-ImPy 114β3 5'-W T C G A W-3' HpPyImPy-γ-Hp-β-ImPy 117β3 5'-W T C G G W-3' HpPyImIm-γ-Py-β-ImPy 117β2 5'-W T C G G W-3' HpPyImIm-γ-Py-β-ImPy 118β3 5'-W T C G C W-3' HpPyImPy-γ-Im-β-ImPy 118β2 5'-W T C G C W-3' HpPyImPy-γ-Im-β-ImPy 118β2 5'-W T C G C W-3' HpPyImPy-γ-Im-β-ImPy	:	DNA sequence	aromatic amino acid sequence
103β) 5'-W T G C G W-3' HpIm-β-Im-γ-PyImPyPy 105β) 5'-W T C T T W-3' HpPyHpHp-γ-Py-β-ImPy 106β) 5'-W T C T G W-3' HpPyHpHp-γ-Py-β-ImPy 107β) 5'-W T C T G W-3' HpPyHpIm-γ-Py-β-ImPy 108β) 5'-W T C T G W-3' HpPyHpIm-γ-Py-β-ImPy 108β) 5'-W T C T C W-3' HpPyHpPy-γ-Im-β-ImPy 109β) 5'-W T C A T W-3' HpPyPyPy-γ-Im-β-ImPy 110β) 5'-W T C A G W-3' HpPyPyPy-γ-Py-β-ImPy 111β) 5'-W T C A G W-3' HpPyPyPy-γ-Hp-β-ImPy 111β) 5'-W T C A G W-3' HpPyPyPy-γ-Im-β-ImPy 112β) 5'-W T C A C W-3' HpPyPyPy-γ-Im-β-ImPy 113β) 5'-W T C G T W-3' HpPyPyPy-γ-Im-β-ImPy 113β) 5'-W T C G T W-3' HpPyImPy-γ-Py-β-ImPy 114β) 5'-W T C G G W-3' HpPyImPy-γ-Py-β-ImPy 114β) 5'-W T C G G W-3' HpPyImPy-γ-Hp-β-ImPy 117β) 5'-W T C G G W-3' HpPyImIm-γ-Py-β-ImPy 117β) 5'-W T C G G W-3' HpPyImIm-γ-Py-β-ImPy 117β2) 5'-W T C G G W-3' HpPyImIm-γ-Py-β-ImPy 118β2) 5'-W T C G C W-3' HpPyImPy-γ-Im-β-ImPy 118β2) 5'-W T C G C W-3' HpPyImPy-γ-Im-β-ImPy 118β2) 5'-W T C G C W-3' HpPyImPy-γ-Im-β-ImPy		91β) 5'-W T G T G W-3'	нрІт-β-Іт-γ-РуРуРуРу
105β) 5'-W T C T T W-3' HpPyHpHp-γ-Py-β-ImPy 106β) 5'-W T C T A W-3' HpPyHpHp-γ-Py-β-ImPy 107β) 5'-W T C T G W-3' HpPyHpIm-γ-Py-β-ImPy 108β) 5'-W T C T G W-3' HpPyHpPy-γ-Im-β-ImPy 109β) 5'-W T C T C W-3' HpPyPyHp-γ-Py-β-ImPy 109β) 5'-W T C A T W-3' HpPyPyHp-γ-Py-β-ImPy 110β) 5'-W T C A A W-3' HpPyPyHp-γ-Py-β-ImPy 111β) 5'-W T C A G W-3' HpPyPyIm-γ-Py-β-ImPy 111β) 5'-W T C A G W-3' HpPyPyIm-γ-Py-β-ImPy 112β) 5'-W T C A C W-3' HpPyPyPy-γ-Im-β-ImPy 113β) 5'-W T C G T W-3' HpPyPyPy-γ-Im-β-ImPy 113β2) 5'-W T C G T W-3' HpPyImHp-γ-Py-β-ImPy 114β) 5'-W T C G A W-3' HpPyImPy-γ-Py-β-ImPy 114β2) 5'-W T C G A W-3' HpPyImPy-γ-Hp-β-ImPy 117β2 5'-W T C G G W-3' HpPyImIm-γ-Py-β-ImPy 117β2 5'-W T C G G W-3' HpPyImIm-γ-Py-β-ImPy 117β2 5'-W T C G G W-3' HpPyImIm-γ-Py-β-ImPy 118β3 5'-W T C G C W-3' HpPyImIm-γ-Py-β-ImPy 118β2 5'-W T C G C W-3' HpPyImPy-γ-Im-β-ImPy 118β2 5'-W T C G C W-3' HpPyImPy-γ-Im-β-ImPy	5	95β) 5'-W T G A G W-3'	нрім-β-ім-γ-рунрруру
106β) 5'-W T C T A W-3' HpPyHpPy-γ-Hp-β-ImPy 107β) 5'-W T C T G W-3' HpPyHpIm-γ-Py-β-ImPy 108β) 5'-W T C T G W-3' HpPyHpIm-γ-Py-β-ImPy 109β) 5'-W T C A T W-3' HpPyHpPy-γ-Im-β-ImPy 110β) 5'-W T C A A W-3' HpPyPyHp-γ-Py-β-ImPy 111β) 5'-W T C A G W-3' HpPyPyHp-γ-Py-β-ImPy 111β) 5'-W T C A G W-3' HpPyPyIm-γ-Py-β-ImPy 111β) 5'-W T C A G W-3' HpPyPyIm-γ-Py-β-ImPy 112β) 5'-W T C A C W-3' HpPyPyPy-γ-Im-β-ImPy 113β) 5'-W T C G T W-3' HpPyPyPy-γ-Im-β-ImPy 113β) 5'-W T C G T W-3' HpPyImHp-γ-Py-β-ImPy 114β) 5'-W T C G A W-3' HpPyImPy-γ-Py-β-ImPy 114β) 5'-W T C G G W-3' HpPyImPy-γ-Hp-β-ImPy 114β2) 5'-W T C G G W-3' HpPyImIm-γ-Py-β-ImPy 117β2 5'-W T C G G W-3' HpPyImIm-γ-Py-β-ImPy 117β2 5'-W T C G G W-3' HpPyImIm-γ-Py-β-ImPy 118β2 5'-W T C G C W-3' HpPyImIm-γ-Py-β-ImPy 118β2 5'-W T C G C W-3' HpPyImIm-γ-Py-β-ImPy 118β2 5'-W T C G C W-3' HpPyImPy-γ-Im-β-ImPy		103β) 5'-W Т G С G W-3'	HpIm-β-Im-γ-PyImPyPy
107β) 5'-W T C T G W-3' HpPyHpIm-γ-Py-β-ImPy 108β) 5'-W T C T G W-3' HpPyHpIm-γ-Py-β-ImPy 109β) 5'-W T C T C W-3' HpPyPyHp-γ-Im-β-ImPy 110β) 5'-W T C A T W-3' HpPyPyHp-γ-Py-β-ImPy 111β) 5'-W T C A A W-3' HpPyPyPy-γ-Hp-β-ImPy 111β) 5'-W T C A G W-3' HpPyPyIm-γ-Py-β-ImPy 111β) 5'-W T C A G W-3' HpPyPyIm-γ-Py-β-ImPy 111β) 5'-W T C A C W-3' HpPyPyPy-γ-Im-β-ImPy 112β) 5'-W T C G T W-3' HpPyImPy-γ-Py-β-ImPy 113β) 5'-W T C G T W-3' HpPyImPy-γ-Py-β-ImPy 114β) 5'-W T C G A W-3' HpPyImPy-γ-Py-β-ImPy 114β) 5'-W T C G A W-3' HpPyImPy-γ-Hp-β-ImPy 114β) 5'-W T C G G W-3' HpPyImPy-γ-Hp-β-ImPy 117β) 5'-W T C G G W-3' HpPyImIm-γ-Py-β-ImPy 117β) 5'-W T C G C W-3' HpPyImIm-γ-Py-β-ImPy 117β) 5'-W T C G C W-3' HpPyImIm-γ-Py-β-ImPy 118β) 5'-W T C G C W-3' HpPyImPy-γ-Im-β-ImPy 118β2) 5'-W T C G C W-3' HpPyImPy-γ-Im-β-ImPy		105β) 5'-W Т С Т Т W-3'	${\tt HpPyHpHp-\gamma-Py-\beta-ImPy}$
10 107β2) 5'-W T C T G W-3' HpPy-β-Im-γ-Py-β-ImPy 108β) 5'-W T C T C W-3' HpPyHpPy-γ-Im-β-ImPy 109β) 5'-W T C A T W-3' HpPyPyHp-γ-Py-β-ImPy 110β) 5'-W T C A A W-3' HpPyPyPy-γ-Hp-β-ImPy 111β) 5'-W T C A G W-3' HpPyPyIm-γ-Py-β-ImPy 111β) 5'-W T C A G W-3' HpPyPyIm-γ-Py-β-ImPy 112β) 5'-W T C A C W-3' HpPyPyPy-γ-Im-β-ImPy 113β) 5'-W T C G T W-3' HpPyImHp-γ-Py-β-ImPy 113β2) 5'-W T C G T W-3' HpPyImHp-γ-Py-β-ImPy 114β) 5'-W T C G A W-3' HpPyImPy-γ-Hp-β-ImPy 114β2) 5'-W T C G A W-3' HpPyImPy-γ-Hp-β-ImPy 117β2) 5'-W T C G G W-3' HpPyImIm-γ-Py-β-ImPy 117β2) 5'-W T C G G W-3' HpPyImIm-γ-Py-β-ImPy 117β2) 5'-W T C G C W-3' HpPyImIm-γ-Py-β-ImPy 118β2) 5'-W T C G C W-3' HpPyImPy-γ-Im-β-ImPy 118β2) 5'-W T C G C W-3' HpPyImPy-γ-Im-β-ImPy		106β) 5'-W ТСТА W-3'	$ ext{HpPyHpPy-}\gamma ext{-Hp-}\beta ext{-ImPy}$
108β) 5'-W T C T C W-3' HpPyHpPy-γ-Im-β-ImPy 109β) 5'-W T C A T W-3' HpPyPyPy-γ-Im-β-ImPy 110β) 5'-W T C A A W-3' HpPyPyPy-γ-Hp-β-ImPy 111β) 5'-W T C A G W-3' HpPyPyIm-γ-Py-β-ImPy 111β) 5'-W T C A G W-3' HpPyPyIm-γ-Py-β-ImPy 112β) 5'-W T C A C W-3' HpPyPyPy-γ-Im-β-ImPy 113β) 5'-W T C G T W-3' HpPyImHp-γ-Py-β-ImPy 113β2) 5'-W T C G T W-3' HpPyImHp-γ-Py-β-ImPy 114β) 5'-W T C G A W-3' HpPyImPy-γ-Hp-β-ImPy 114β2) 5'-W T C G A W-3' HpPyImPy-γ-Hp-β-ImPy 117β2) 5'-W T C G G W-3' HpPyImIm-γ-Py-β-ImPy 117β2) 5'-W T C G G W-3' HpPyImIm-γ-Py-β-ImPy 118β3 5'-W T C G C W-3' HpPyImPy-γ-Im-β-ImPy 118β2) 5'-W T C G C W-3' HpPyImPy-γ-Im-β-ImPy 118β2) 5'-W T C G C W-3' HpPyImPy-γ-Im-β-ImPy		107β) 5'-W ТСТС W-3'	${\tt HpPyHpIm-\gamma-Py-\beta-ImPy}$
109β) 5'-W T C A T W-3' HpPyPyHp-γ-Py-β-ImPy 110β) 5'-W T C A A W-3' HpPyPyHp-γ-Py-β-ImPy 111β) 5'-W T C A G W-3' HpPyPyIm-γ-Py-β-ImPy 111β2) 5'-W T C A G W-3' HpPyPyPy-γ-Im-β-ImPy 112β) 5'-W T C A C W-3' HpPyPyPy-γ-Im-β-ImPy 113β2) 5'-W T C G T W-3' HpPyImHp-γ-Py-β-ImPy 113β2) 5'-W T C G T W-3' HpPyImHp-γ-Py-β-ImPy 114β) 5'-W T C G A W-3' HpPyImPy-γ-Hp-β-ImPy 114β2) 5'-W T C G A W-3' HpPyImPy-γ-Hp-β-ImPy 117β2) 5'-W T C G G W-3' HpPyImIm-γ-Py-β-ImPy 117β2) 5'-W T C G G W-3' HpPyImIm-γ-Py-β-ImPy 118β) 5'-W T C G C W-3' HpPyImIm-γ-Py-β-ImPy 118β2) 5'-W T C G C W-3' HpPyImPy-γ-Im-β-ImPy 118β2) 5'-W T C G C W-3' HpPyImPy-γ-Im-β-ImPy	10	107β2) 5'-W ТСТ G W-3'	${\tt HpPy-\beta-Im-\gamma-Py-\beta-ImPy}$
110β) 5'-W T C A A W-3' HpPyPyPy-γ-Hp-β-ImPy 111β) 5'-W T C A G W-3' HpPyPyPy-γ-Hp-β-ImPy 111β) 5'-W T C A G W-3' HpPyPyPy-γ-Im-β-ImPy 112β) 5'-W T C A C W-3' HpPyPyPy-γ-Im-β-ImPy 113β) 5'-W T C G T W-3' HpPyImHp-γ-Py-β-ImPy 113β2) 5'-W T C G T W-3' HpPyImHp-γ-Py-β-ImPy 114β) 5'-W T C G A W-3' HpPyImPy-γ-Hp-β-ImPy 114β2) 5'-W T C G A W-3' HpPyImPy-γ-Hp-β-ImPy 117β) 5'-W T C G G W-3' HpPyImIm-γ-Py-β-ImPy 117β2) 5'-W T C G G W-3' HpPyImIm-γ-Py-β-ImPy 118β2) 5'-W T C G C W-3' HpPyImPy-γ-Im-β-ImPy 118β2) 5'-W T C G C W-3' HpPyImPy-γ-Im-β-ImPy		108β) 5'-W Т С Т С W-3'	$\mathtt{HpPyHpPy}$ - γ - \mathtt{Im} - β - \mathtt{ImPy}
111β) 5'-W T C A G W-3' HpPyPyIm-γ-Py-β-ImPy 111β2) 5'-W T C A G W-3' HpPyPyIm-γ-Py-β-ImPy 112β) 5'-W T C A C W-3' HpPyPyPy-γ-Im-β-ImPy 113β) 5'-W T C G T W-3' HpPyImHp-γ-Py-β-ImPy 113β2) 5'-W T C G T W-3' HpPyImHp-γ-Py-β-ImPy 114β) 5'-W T C G A W-3' HpPyImPy-γ-Hp-β-ImPy 114β2) 5'-W T C G A W-3' HpPyImPy-γ-Hp-β-ImPy 117β) 5'-W T C G G W-3' HpPyImIm-γ-Py-β-ImPy 117β2) 5'-W T C G G W-3' HpPyImIm-γ-Py-β-ImPy 118β3) 5'-W T C G C W-3' HpPyImIm-γ-Py-β-ImPy 118β2) 5'-W T C G C W-3' HpPyImPy-γ-Im-β-ImPy 118β2) 5'-W T C G C W-3' HpPyImPy-γ-Im-β-ImPy		109β) 5'-W Т С А Т W-3'	НрРуРуНр-ү-Ру-β-ІтРу
111β2) 5'-W T C A G W-3' HpPy-β-Im-γ-Py-β-ImPy 112β) 5'-W T C A C W-3' HpPyPyPy-γ-Im-β-ImPy 113β) 5'-W T C G T W-3' HpPyImHp-γ-Py-β-ImPy 113β2) 5'-W T C G T W-3' Hp-β-ImHp-γ-Py-β-ImPy 114β) 5'-W T C G A W-3' HpPyImPy-γ-Hp-β-ImPy 114β2) 5'-W T C G A W-3' HpPyImPy-γ-Hp-β-ImPy 117β) 5'-W T C G G W-3' HpPyImIm-γ-Py-β-ImPy 117β2) 5'-W T C G G W-3' HpPyImIm-γ-Py-β-ImPy 118β2) 5'-W T C G C W-3' HpPyImIm-γ-Py-β-ImPy 118β2) 5'-W T C G C W-3' HpPyImPy-γ-Im-β-ImPy 118β2) 5'-W T C G C W-3' HpPyImPy-γ-Im-β-ImPy		110β) 5'-W T C A A W-3'	${ t HpPyPyPy-\gamma-Hp-\beta-ImPy}$
112β) 5'-W T C A C W-3'		111β) 5'-W T C A G W-3'	${\tt HpPyPyIm-\gamma-Py-\beta-ImPy}$
113β) 5'-W T C G T W-3' HpPyImHp-γ-Py-β-ImPy 113β2) 5'-W T C G T W-3' Hp-β-ImHp-γ-Py-β-ImPy 114β) 5'-W T C G A W-3' HpPyImPy-γ-Hp-β-ImPy 20 114β2) 5'-W T C G A W-3' HpPyImIm-γ-Py-β-ImPy 117β) 5'-W T C G G W-3' HpPyImIm-γ-Py-β-ImPy 117β2) 5'-W T C G G W-3' Hp-β-ImIm-γ-Py-β-ImPy 118β) 5'-W T C G C W-3' HpPyImPy-γ-Im-β-ImPy 118β2) 5'-W T C G C W-3' HpPyImPy-γ-Im-β-ImPy	15		${\tt HpPy-\beta-Im-\gamma-Py-\beta-ImPy}$
113β2) 5'-W T C G T W-3' Hp-β-ImHp-γ-Py-β-ImPy 114β) 5'-W T C G A W-3' Hp-β-ImPy-γ-Hp-β-ImPy 117β) 5'-W T C G A W-3' Hp-β-ImPy-γ-Hp-β-ImPy 117β2) 5'-W T C G G W-3' Hp-β-ImIm-γ-Py-β-ImPy 118β) 5'-W T C G C W-3' Hp-β-ImIm-γ-Py-β-ImPy 118β2) 5'-W T C G C W-3' Hp-β-ImPy-γ-Im-β-ImPy 118β2) 5'-W T C G C W-3' Hp-β-ImPy-γ-Im-β-ImPy			$\mathtt{HpPyPyPy}$ - γ - \mathtt{Im} - β - \mathtt{ImPy}
114β) 5'-W T C G A W-3' HpPyImPy-γ-Hp-β-ImPy 114β2) 5'-W T C G A W-3' Hp-β-ImPy-γ-Hp-β-ImPy 117β) 5'-W T C G G W-3' HpPyImIm-γ-Py-β-ImPy 117β2) 5'-W T C G G W-3' Hp-β-ImIm-γ-Py-β-ImPy 118β) 5'-W T C G C W-3' HpPyImPy-γ-Im-β-ImPy 118β2) 5'-W T C G C W-3' Hp-β-ImPy-γ-Im-β-ImPy			${\tt HpPyImHp-\gamma-Py-\beta-ImPy}$
20 114β2) 5'-W T C G A W-3' Hp-β-ImPy-γ-Hp-β-ImPy 117β) 5'-W T C G G W-3' Hp-β-ImIm-γ-Py-β-ImPy 117β2) 5'-W T C G G W-3' Hp-β-ImIm-γ-Py-β-ImPy 118β) 5'-W T C G C W-3' Hp-β-ImPy-γ-Im-β-ImPy 118β2) 5'-W T C G C W-3' Hp-β-ImPy-γ-Im-β-ImPy			${\tt Hp} extsf{-}{f \beta} extsf{-}{\tt Im}{\tt Hp} extsf{-}{f \gamma} extsf{-}{\tt Im}{\tt Py}$
117β) 5'-W T C G G W-3' HpPyImIm-γ-Py-β-ImPy 117β2) 5'-W T C G C W-3' Hp-β-ImIm-γ-Py-β-ImPy 118β) 5'-W T C G C W-3' HpPyImPy-γ-Im-β-ImPy 118β2) 5'-W T C G C W-3' Hp-β-ImPy-γ-Im-β-ImPy			$\mathtt{HpPyImPy-}\gamma\mathtt{-Hp-}\beta\mathtt{-ImPy}$
117β2) 5'-W T C G G W-3' Hp-β-ImIm-γ-Py-β-ImPy 118β) 5'-W T C G C W-3' HpPyImPy-γ-Im-β-ImPy 118β2) 5'-W T C G C W-3' Hp-β-ImPy-γ-Im-β-ImPy	20		$\mathtt{Hp} extsf{-}eta extsf{-}\mathtt{ImPy} extsf{-}\gamma extsf{-}\mathtt{ImPy}$
118β) 5'-W T C G C W-3' HpPyImpy-γ-Im-β-Impy 118β2) 5'-W T C G C W-3' Hp-β-Impy-γ-Im-β-Impy			${\tt HpPyImIm-\gamma-Py-\beta-ImPy}$
118β2) 5'-W T C G C W-3' Hp-β-ImPy-γ-Im-β-ImPy			$\mathtt{Hp} extsf{-}eta extsf{-}\mathtt{Im}\mathtt{Im} extsf{-}\gamma extsf{-}\mathtt{Im}\mathtt{Py}$
The proof of the p			${\tt HpPyImPy-\gamma-Im-\beta-ImPy}$
25 119 β) 5'-W T C C G W-3' HpPy- β -Im- γ -PyImImPy	0.		${ t Hp}$ - ${ t eta}$ - ${ t Im}$ - ${ t Y}$ - ${ t Im}$ - ${ t Y}$
	25	119β) 5'-W T C C G W-3'	HpPy-β-Im-γ-PyImImPy

	TABLE 16: 8-	ring Hairpin Polyamides for recognition	of 6-bp 5'-WAWNNW-3' with β-substitutions included.
		DNA sequence	aromatic amino acid sequence
	123β)	5'-W A T T G W-3'	РуНр-β-Ім-ү-РуРуРуНр
5	127β)	5'-W A T A G W-3'	РуНр-β-Іт-ү-РуНрРуНр
	129 β)	5'-W A T G T W-3'	Ру-β-ІπΗр-γ-РуРуРуНр
	130β)	5'-W A T G A W-3'	Py - β - $ImPy$ - γ - $HpPyPyHp$
	131β)	5'-W A T G G W-3'	${\tt Py-\beta-ImIm-\gamma-PyPyPyHp}$
	132β)	5'-W A T G C W-3'	Ру-β-ІмРу-ү-ІмРуРуНр
10	135β)	5'-W A T C G W-3'	РуНр- β -Im- γ -РуІmРуНр
	139β)	5'-W A A T G W-3'	РуРу-β-Іт-ү-РуРуНрНр
	143β)	5'-W A A A G W-3'	РуРу-β-Іm-γ-РуНрНрНр
	145β)	5'-W A A G T W-3'	Ру-β-ІπНр-γ-РуРуНрНр
	146β)	5'-W A A G A W-3'	$ exttt{Py-}eta exttt{-ImPy-}\gamma exttt{-HpPyHpHp}$
15	147β)	5'-W A A G G W-3'	$ exttt{Py-}eta exttt{-} exttt{ImIm-}\gamma exttt{-} exttt{PyPyHpHp}$
	148β)	5'-W A A G C W-3'	$Py-eta-ImPy-\gamma-ImPyHpHp$
	151β)	5'-W A A C G W-3'	РуРу-β-Іт-ү-РуІтНрНр

	TABLE 17: 8-ring Hairpin Polyamides for recognit	ion of 6-bp 5'-WASNNW-3' with β-substitutions included.
	DNA sequence	aromatic amino acid sequence
	155β) 5'-W A G T G W-3'	РуІт-β-Іт-ү-РуРуРуНр
5	159β) 5'-W A G A G W-3'	РуІт-β-Іт-ү-РуНрРуНр
	167β) 5'-W A G C G W-3'	$\mathtt{PyIm} \hbox{-} \beta \hbox{-} \mathtt{Im} \hbox{-} \gamma \hbox{-} \mathtt{PyIm} \mathtt{Py} \mathtt{Hp}$
	169β) 5'-W A C T T W-3'	$PyPyHpHp-\gamma-Py-\beta-ImHp$
	170β) 5'-W A C T A W-3'	РуРуНрРу- γ -Нр- β -ІmНр
	171β) 5'-W A C T G W-3'	$PyPyHpIm-\gamma-Py-\beta-ImHp$
10	171β2) 5'-W A C T G W-3'	$PyPy-\beta-Im-\gamma-Py-\beta-ImHp$
	172β) 5'-W A C T C W-3'	$PyPyHpPy-\gamma-Im-\beta-ImHp$
	173β) 5'-W A C A T W-3'	$PyPyPyHp-\gamma-Py-\beta-ImHp$
	174β) 5'-W A C A A W-3'	$PyPyPyPy-\gamma-Hp-\beta-ImHp$
	175β) 5'-W A C A G W-3'	$PyPyPyIm-\gamma-Py-\beta-ImHp$
15	175β2) 5'-W A C A G W-3'	$PyPy-\beta-Im-\gamma-Py-\beta-ImHp$
	176β) 5'-W A C A C W-3'	$PyPyPyPy-\gamma-Im-\beta-ImHp$
	177β) 5'-W A C G T W-3'	$PyPyImHp-\gamma-Py-\beta-ImHp$
	177β2) 5'-W A C G T W-3'	$Py-\beta-ImHp-\gamma-Py-\beta-ImHp$
	178β) 5'-W A C G A W-3'	${\tt PyPyImPy-\gamma-Hp-\beta-ImHp}$
20	178β2) 5'-W A C G A W-3'	$Py-\beta-ImPy-\gamma-Hp-\beta-ImHp$
	181β) 5'-W A C G G W-3'	$PyPyImIm-\gamma-Py-\beta-ImHp$
	181β2) 5'-W A C G G W-3'	$Py-\beta-ImIm-\gamma-Py-\beta-ImHp$
	182β) 5'-W A C G C W-3'	${\tt PyPyImPy-\gamma-Im-\beta-ImHp}$
	182β2) 5'-W A C G C W-3'	$Py-\beta-ImPy-\gamma-Im-\beta-ImHp$
25	183β2) 5'-W A C C G W-3'	$PyPy-\beta-Im-\gamma-PyImImHp$
		•

····	DNA sequence	aromatic amino acid sequence
185β)	5'-W C T T T W-3'	РуНрНрНр-ү-РуРу-β-Im
186β)	5'-W C T T A W-3'	РуНрНрРу-ү-НрРу-β-Im
187β)	5'-W C T T G W-3'	РуНрНрІт-ү-РуРу-β-Іт
187β2)	5'-W C T T G W-3'	РуНр-β-Іт-ү-РуРу-β-Іт
188β)	5'-W C T T C W-3'	РуНрНрРу-ү-ІтРу-β-Іт
189β)	5'-W C T A T W-3'	РуНрРуНр- γ -РуНр- β -Іm
190β)	5'-W C T A A W-3'	РуНрРуРу- γ -НрНр- β -Іm
191β)	5'-W C T A G W-3'	РуНрРуІт-ү-РуНр- eta -Іт
191 β2)	5'-W C T A G W-3'	РуНр- β -Іm- γ -РуНр- β -Іm
192β)	5'-W C T A C W-3'	$PyHpPyPy-\gamma-ImHp-\beta-Im$
193β)	5'-W C T G T W-3'	$PyHpImHp-\gamma-PyPy-\beta-Im$
193β2)	5'-W C T G T W-3'	$Py-\beta-ImHp-\gamma-PyPy-\beta-Im$
194β)	5'-W C T G A W-3'	$PyHpImPy-\gamma-HpPy-\beta-Im$
194β2)	5'-W C T G A W-3'	$Py-\beta-ImPy-\gamma-HpPy-\beta-Im$
195β)	5'-W C T G G W-3'	PyHpImIm- γ -PyPy- β -Im
195 β2)	5'-W C T G G W-3'	$Py-\beta-ImIm-\gamma-PyPy-\beta-Im$
196β)	5'-W C T G C W-3'	PyHpImPy-γ-ImPy-β-Im
196 β2)	5'-W C T G C W-3'	$Py-\beta-ImPy-\gamma-ImPy-\beta-Im$
197 β)	5'-W C T C T W-3'	$PyHpPyHp-\gamma-PyIm-\beta-Im$
198 β)	5'-W C T C A W-3'	РуНрРуРу- γ -НрІm- β -Іm
199β)	5'-W C T C G W-3'	PyHpPyIm-γ-PyIm-β-Im
199 β2)	5'-W C T C G W-3'	${\tt PyHp-\beta-Im-\gamma-PyIm-\beta-Im}$
200β)	5'-W C T C C W-3'	PyHpPyPy-γ-ImIm-β-Im
201β)	5'-W C A T T W-3'	РуРуНрНр-γ-РуРу-β-Im
202β)	5'-W C A T A W-3'	РуРуНрРу- γ -НрРу- β -Іm
203β)	5'-W C A T G W-3'	${\tt PyPyHpIm-\gamma-PyPy-\beta-Im}$
203β2)	5'-W C A T G W-3'	$\mathtt{PyPy-}\beta\mathtt{-Im-}\gamma\mathtt{-PyPy-}\beta\mathtt{-Im}$
204β)	5'-W C A T C W-3'	РуРуНрРу- γ -ІmРу- β -Іm
205 β)	5'-W C A A T W-3'	РуРуРуНр- γ -РуНр- β -Іm
206β)	5'-W C A A A W-3'	$PyPyPyPy-\gamma-HpHp-\beta-Im$

_		DNA sequence	6-bp 5'-WCWNNW-3' with β -substitutions included.
=		DIVI sequence	aromatic amino acid sequence
	207β)	5'-W C A A G W-3'	${\tt PyPyPyIm-\gamma-PyHp-\beta-Im}$
	207β2)	5'-W C A A G W-3'	РуРу-β-Іт-ү-РуНр-β-Іт
	208β)	5'-W C A A C W-3'	РуРуРуРу- γ -ImHp- β -Im
	209β)	5'-W C A G T W-3'	РуРуІтНр-ү-РуРу-β-Іт
	209 β2)	5'-W C A G T W-3'	$Py-\beta-ImHp-\gamma-PyPy-\beta-Im$
	210β)	5'-W C A G A W-3'	$PyPyImPy-\gamma-HpPy-\beta-Im$
	210β2)	5'-W C A G A W-3'	$Py-\beta-ImPy-\gamma-HpPy-\beta-Im$
	211β)	5'-W C A G G W-3'	PyPyImIm-γ-PyPy-β-Im
	211 β2)	5'-W C A G G W-3'	Py-β-ImIm-γ-PyPy-β-Im
	212β)	5'-W C A G C W-3'	PyPyImPy- γ -ImPy- β -Im
	212 β2)	5'-W C A G C W-3'	$Py-\beta-ImPy-\gamma-ImPy-\beta-Im$
	213β)	5'-W C A C T W-3'	${\tt PyPyPyHp-\gamma-PyIm-\beta-Im}$
	214 β)	5'-W C A C A W-3'	$PyPyPyPy-\gamma-HpIm-\beta-Im$
	215β)	5'-W C A C G W-3'	PyPyPyIm-γ-PyIm-β-Im
	215 β2)	5'-W C A C G W-3'	PyPy-β-Im-γ-PyIm-β-Im
	216 β)	5'-W C A C C W-3'	$PyPyPy-\gamma-ImIm-\beta-Im$

	2170)		
	217 β)	5'-W C G T T W-3'	РуІтНрНр-ү-РуРу-β-Іт
	218 β)	5'-W C G T A W-3'	PyImHpPy-γ-HpPy-β-Im
	219β)	5'-W C G T G W-3'	PyImHpIm-γ-PyPy-β-Im
	219β2)	5'-W C G T G W-3'	Pyİm-β-Im-γ-PyPy-β-Im
	220 β)	5'-W C G T C W-3'	PyImHpPy-γ-ImPy-β-Im
	221β)	5'-W C G A T W-3'	$PyImPyHp-\gamma-PyHp-\beta-Im$
	222β)	5'-W C G A A W-3'	PyImPyPy-7-HpHp- β -Im
	223β)	5'-W C G A G W-3'	PyImPyIm-γ-PyHp-β-Im
	223 β2)	5'-W C G A G W-3'	PyIm-β-Im-γ-PyHp-β-Im
	224β)	5'-W C G A C W-3'	$PyImPyPy-\gamma-ImHp-\beta-Im$
	225β)	5'-W C G G T W-3'	PyImImHp-γ-PyPy-β-Im
	226β)	5'-W C G G A W-3'	${\tt PyImImPy-\gamma-HpPy-\beta-Im}$
	227β)	5'-W C G C T W-3'	PyImPyHp-7-PyIm-β-Im
	228β)	5'-W C G C A W-3'	PyImPyPy-γ-HpIm-β-Im
	229 β)	5'-W C C T T W-3'	РуРуНрНр- γ -Ру- β -ІmІm
	230β)	5'-W C C T A W-3'	РуРуНрРу-ү-Нр-β-ІтІт
•. •	231β)	5'-W C C T G W-3'	${\tt PyPyHpIm-\gamma-Py-\beta-ImIm}$
	231β2)	5'-W C C T G W-3'	${\tt PyPy-\beta-Im-\gamma-Py-\beta-ImIm}$
	232β)	5'-W C C T C W-3'	PyPyHpPy-y-Im-β-ImIm
	233β)	5'-W C C A T W-3'	${\tt PyPyPyHp-\gamma-Py-\beta-ImIm}$
	234β)	5'-W C C A A W-3'	${\tt PyPyPyPy-\gamma-Hp-\beta-ImIm}$
	235β)	5'-W C C A G W-3'	${\tt PyPyPyIm-\gamma-Py-\beta-ImIm}$
	235β2)	5'-W C C A G W-3'	PyPy-β-Im-γ-Py-β-ImIm
	236β)	5'-W C C A C W-3'	PyPyPyPy-y-Im-\beta-ImIm
	237β)	5'-W C C G T W-3'	${\tt PyPyImHp-\gamma-Py-\beta-ImIm}$
	237β2)	5'-W C C G T W-3'	$Py-\beta-ImHp-\gamma-Py-\beta-ImIm$
	238β)	5'-W C C G A W-3'	${\tt PyPyImPy-\gamma-Hp-\beta-ImIm}$
	238β2)	5'-W C C G A W-3'	$Py-\beta-ImPy-\gamma-Hp-\beta-ImIm$
	G9 β)	5'-W C G G G W-3'	PyImImIm-γ-PyPy-β-Im

TABLE 19 (cont): 8-ring Hairpin Polyamides for recognition of 6-bp 5'-WCSNNW-3' with β-substitutions included.

DNA sequence	aromatic amino acid sequence
G11β) 5'-₩ C G C G W-3'	PyImPyIm-γ-PyIm-β-Im
G11β2)5'-W C G C G W-3'	PyIm-β-Im-γ-PyIm-β-Im
G12β) 5'-W C G C C W-3'	PyImPyPy-γ-ImIm-β-Im
G13β) 5'-W C C G G W-3'	$\mathtt{PyPyImIm-}\gamma\mathtt{-Py-}\beta\mathtt{-ImIm}$
G13β2)5'-W C C G G W-3'	${\tt Py-\beta-ImIm-\gamma-Py-\beta-ImIm}$
G14β) 5'-W C C G C W-3'	${\tt PyPyImPy-\gamma-Im-\beta-ImIm}$
G14β2)5'-W C C G C W-3'	$Py-\beta-ImPy-\gamma-Im-\beta-ImIm$
G15β) 5'-W C C C G W-3'	PyPy-β-Im-γ-PyImImIm

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If the process described above of designing a preferred polyamide molecule $X_1X_2X_3X_4-\gamma-X_5X_6X_7X_8$ comprising eight aromatic aminoacid residues does not produce a selective polyamide that binds to the target identified DNA sequence with subnanomolar affinity and with a selectivity over mismatch sequences of greater than a factor of ten, a polyamide molecule $X_1X_2X_3X_4X_5-\gamma-X_6X_7X_8X_9X_{10}$ having five carboxamide binding pairs can be designed that is selective for a seven base pair identified target 5'-WNNNNNW-3' sequence. The design and synthesis of the five binding pair polyamide is similar to that of the four binding pair polyamide $X_1X_2X_3X_4-\gamma-X_5X_6X_7X_8$ described above.

The polyamide design process, shown schematically in Figure 7 provides a method for designing a ten carboxamide residue molecule comprising five carboxamide binding pairs for selective detection and binding of a target seven base pair 5'-WNNNNW-3' sequence in the minor groove of double stranded DNA. The design process identifies an appropriate polyamide ligand for recognition of a predetermined seven base pair, 5'-WNNNNW-3' sequence with subnanomolar affinity and >10-fold specificity versus mismatch sites. Trauger, J.W., Baird, E. E. Dervan, P.B. describes the recognition of DNA by designed ligands at subnanomolar concentrations. *Nature* 382, 559-561 (1996).

In order to prepare a polyamide molecule specific for an identified seven base pair sequence of double stranded DNA, a user starts the 10-ring hairpin design process that implements the minor groove recognition pairing code summarized in Table 2 above. In the

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design process a 5'-WNNNNNW-3' sequence was identified. In a preferred embodiment, the identified sequence was located within a gene promoter. The identified sequence was then defined as 5'-WabcdeW-3' in a stepwise process wherein a, b, c, d, and e, were sequentially and independently defined as A, G, C, or T. The structure of the polyamide molecule was then correspondingly defined by sequentially chosing antiparallel carboxamide binding pairs according to the minor groove pairing code summarized in Table 2 above. Thus, if a was G, then X1 was defined as Im, and X10 was defined as Py. If a was C, then X1 was defined as Py, and X10 was defined as Hp, and X10 was defined as Py. If a was A, then X1 was defined as Py, and X10 was defined as Py, and X10 was defined as Pp.

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Similarly, b was defined as A, G, C, or T and corresponding carboxamide binding pairs were defined. According to the same rules, if b was G, then X_2 was defined as Im, and X_9 was defined as Py. If b was C, then X_2 was defined as Py, and X_9 was defined as Im. Likewise, if b was T, then X_2 was defined as Hp, and X_9 was defined as Py. If b was A, then X_2 was defined as Py, and X_9 was defined as Hp.

The next step was to define c as A, G, C, or T and then define corresponding carboxamide binding pairs. Following the same rules, if c was G, then X3 was defined as Im, and X8 was defined as Py. If c was C, then X3 was defined as Py, and X8 was defined as Im. Similarly, if c was T, then X3 was defined as Hp, and X8 was defined as Py. If c was A, then X3 was defined as Py, and X8 was defined as Hp. Similarly, d was defined as A, G, C, or T and the corresponding carboxamide binding pair was defined. According to the above rules, if d was G, then X4 was defined as Im, and X7 was defined as Py. If d was C, then X4 was defined as Py, and X7 was defined as Hp, and X7 was defined as Py. If d was A, then X4 was defined as Py, and X7 was defined as Hp. Finally, e was defined as A, G, C, or T and the corresponding carboxamide binding pair was defined. According to the above rules, if e was G, then X5 was defined as Im, and X6 was defined as Py. If e was C, then X5 was defined as Py, and X6 was defined as Hp, and X6 was defined as Py. If e was A, then X5 was defined as Py, and X6 was defined as Hp.

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With all ten carboxamide residues that participate in the binding pairs now defined, the designed polyamide $X_1X_2X_3X_4X_5-\gamma-X_6X_7X_8X_9X_{10}$ suitable for binding to the identified

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sequence was synthesized using known techniques. Baird, E. E. & Dervan, P. B. describes the solid phase synthesis of polyamides containing imidazole and pyrrole amino acids. *J. Am. Chem. Soc.* 118, 6141-6146 (1996); also see PCT US 97/003332.

The binding affinity of the synthesized polyamide to the identified sequence was determined using a quantitative DNase footprint titration method for studying protein-DNA interactions described by Brenowitz, M., Senear, D. F., Shea, M. A. & Ackers, G. K., *Methods Enzymol.* 130, 132-181 (1986). If the affinity of the synthesized polyamide at the target site was not subnanomolar affinity then substituting at least one β -alanine residue for a pyrrole or 3-hydroxypyrrole residue was considered in order to optimize the exact positions of the binding pairs of aromatic amino acids. If the affinity of the polyamide at the target site was subnanomolar affinity then the sequence specificity of the polyamide versus mismatch sequences was determined. If the specificity versus mismatch sites was not > 10-fold specificity then adding a β -alanine (shown schematically in Figure 8) was considered, in order to optimize the positions of the aromatic amino acids in relationship to the base pairs in the minor groove. Specificity of the polyamide molecule for the target identified sequence versus mismatch sequence sites of greater than 10-fold was considered a successful result of design process.

The 1024 polyamide molecules comprising five carboxamide binding pairs that were designed using this method are useful for binding to the 1024 target 5'-NNNNN-3' core sequences, and are listed in Tables 20-51. A corresponding polyamide molecule was designed for each DNA sequence (241-1232) and (G17-G48) using the process outlined above and shown schematically in Figure 7.

If the synthesized polyamide molecule did not bind to the target identified sequence with subnanomolar affinity or if the synthesized polyamide molecule did not exhibit a specificity for the target identified sequence versus mismatch sequence sites of greater than 10-fold, the option of substituting an aliphatic amino acid residue for one of the carboxamide residues was considered. The preferred aliphatic amino acid residue is β -alanine. At least one aliphatic amino acid residue such as a β -alanine residue provided some flexibility to the central portion of the polyamide molecule, acting as a "spring" to permit optimization of the hydrogen bonding between the carboxamide binding pairs and the nucleotide bases of the double stranded DNA.

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In general, it was not found to be advantageous to replace either member of the terminal carboxamide binding pair, X_1/X_{10} , with β -alanine. Similarly, β -alanine was not substituted for members of the binding pair, X_5/X_6 , adjacent to the γ hairpin residue. β -alanine residues were not substituted for N-methylimidazole residues. The use of β -alanine in place of a pyrrole or 3-hydroxypyrrole amino acid residue provides aromatic/aliphatic pairing (Im/ β , β /Im, Hp/ β , β /Hp, Py/ β , and β /Py) and aliphatic/aliphatic pairing (β/β) substitution.

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The method for selecting which pyrrole amino acid to substitute with β -alanine is schematically illustrated in Figure 8. Selective placement of an aliphatic β -alanine (β) residue paired with either a pyrrole (Py), 3-hydroxypyrrole (Hp), or imidazole (Im) aromatic amino acid or another β -alanine residue is found to compensate for sequence composition effects to improve recognition and binding of the minor groove of DNA by pyrrole-imidazole polyamides of the present invention. If an all-ring polyamide has been found to have an affinity which is not subnanomolar, or a specificity versus mismatch sequences which is less than 10-fold it may be caused by DNA sequence-composition effects which can be reduced by replacement of an aromatic amino acid with an aliphatic β -alanine residue. In a polyamide molecule that comprises five binding pairs it is only beneficial to place β -alanine in positions X_2 , X_3 , X_4 , X_7 , X_8 , and X_9 . No more than two β -alanine residues may be placed within a single hairpin structure. No more than a single β -residue may be placed within each individual polyamide subunit, e.g., if X_2 is replaced with β -alanine, X_3 or X_4 cannot be replaced as well.

These rules and others were implemented in the method schematically illustrated in Figure 8. This process is suitable for the refinement of the design polyamide comprising five binding pairs that has been designed by the method illustrated in Figure 7, but which lacks subnanomolar affinity or greater than 10-fold specificity at the identified target DNA sequence. As in the basic design method, the designed polyamides are synthesized and the affinity and specificity of binding to the target DNA were determined.

As discussed above, for a given 10-ring polyamide molecule there are six possible outcomes for the process of substituting a β -alanine residue for an aromatic amino acid residue. First, there may be no position at which it is possible to add a β -alanine residue; in such case, a better binding affinity or selectivity can be sought in the design and synthesis of a polyamide

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with four or six carboxamide binding pairs, described below. Second, the process may result in a derivative which contains a single β -alanine substitution (such derivatives are numbered according to the parent numbering scheme such that a single β -derivative of compound 5 would be called 5 β), which is sufficient to produce subnanomolar binding affinity and >10-fold specificity, and at which point the process is deemed complete.

Third, the process of Figure 8 may result in a polyamide which contains a single β -alanine substitution which is not sufficient to produce subnanomolar binding affinity and >10-fold specificity, but where there are no additional positions in which it is possible to substitute a β -alanine residue, and in such a case a paired β -alanine residue should be added as described in Figure 9 and text below. Fourth, the process of Figure 7 may result in a polyamide that contains a single β -alanine substitution that is not sufficient to produce subnanomolar binding affinity and >10-fold specificity, but where there is an additional position for β -alanine substitution that does produce a polyamide with the criterion level of affinity and selectivity. Tables 52-83 list polyamide compounds 241 β -1232 β and G17 β -G48 β , corresponding to DNA sequences 241-1232 and G17 – G48, that contain one or two β -alanine residues.

A fifth possibility is that substitution at a second position by the method illustrated in Figure 9 with a paired β -alanine residue is not sufficient to produce a polyamide having the subnanomolar binding affinity and >10-fold specificity, and a polyamide with four or six carboxamide binding pairs, should be designed and synthesized, as described below. Finally, the design process may result in a polyamide that has a paired β -alanine substitution that is sufficient to produce subnanomolar binding affinity and >10-fold specificity, and therefore the design process is deemed complete. Tables 52-83 list polyamide compounds 241 β -1232 β and G17 β -G48 β , corresponding to DNA sequences 241-1232 and G17 β -G48, that contain one or two β -alanine residues. In addition, Tables 52-83 list polyamides corresponding to sequences (241-1232) and (G17-G48) labeled (241 β p-1232 β p) and (G17 β p-G48 β p) that contain paired β / β residues added by the process described in Figure 9.

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		TABLE 20: 10-ring Hairpin Polyamides for	or recognition of 7-bp 5'-WGGWNNW-3'
		DNA sequence	aromatic amino acid sequence
	241)	5'-W G G T T T W-3'	ІмІтнрнрнр-ү-РуРуРуРуРу
5	242)	5'-W G G T T A W-3'	ІмІмНрНрРу-ү-НрРуРуРуРу
	243)	5'-W G G T T G W-3'	ImImHpHpIm-y-PyPyPyPyPy
	244)	5'-W G G T T C W-3'	ІтітнрнрРу-ү-ІтРуРуРуРу
	245)	5'-W G G T A T W-3'	ІтІтнрРуНр-ү-РуНрРуРуРу
	246)	5'-W G G T A A W-3'	ІшІшНрРуРу-ү-НрНрРуРуРу
10	247)	5'-W G G T A G W-3'	ImImHpPyIm-7-PyHpPyPyPy
	248)	5'-W G G T A C W-3'	ІтІтнрРуРу-ү-ІтнрРуРуРу
	249)	5'-W G G T G T W-3'	ІтПтнрітнр-ү-РуРуРуРуРу
	250)	5'-W G G T G A W-3'	ImImHpImPy-7-HpPyPyPyPy
	251)	5'-W G G T G G W-3'	ImImHpImIm-y-PyPyPyPyPy
15	252)	5'-W G G T G C W-3'	ImImHpImPy-y-ImPyPyPyPy
	253)	5'-W G G T C T W-3'	ІшІшНрРуНр-ү-РуІшРуРуРу
	254)	5'-W G G T C A W-3'	ImImHpPyPy-γ-HpImPyPyPy
	255)	5'-W G G T C G W-3'	ImImHpPyIm-y-PyImPyPyPy
	256)	5'-W G G T C C W-3'	ImImHpPyPy-y-ImImPyPyPy
20	257)	5'-W G G A T T W-3'	ІтІтРунрнр-ү-РуРунрРуРу
	258)	5'-W G G A T A W-3'	ImImPyHpPy-ү-HpPyHpPyPy
	259)	5'-W G G A T G W-3'	ІтІтРунріт-ү-РурунрРуРу
	260)	5'-W G G A T C W-3'	ImImPyHpPy-y-ImPyHpPyPy
	261)	5'-W G G A A T W-3'	ІшІшБАБАТ
25	262)	5'-W G G A A A W-3'	ІшІшБАБАБА - А-НЪНФНФБАБА
	263)	5'-W G G A A G W-3'	ImImPyPyIm-y-PyHpHpPyPy
	264)	5'-W G G A A C W-3'	ImImPyPyPy-y-ImHpHpPyPy
	265)	5'-W G G A G T W-3'	ImImPyImHp-y-PyPyHpPyPy
	266)	5'-W G G A G A W-3'	ImImPyImPy-7-HpPyHpPyPy
30	267)	5'-W G G A G G W-3'	ImImPyImIm-y-PyPyHpPyPy
	268)	5'-W G G A G C W-3'	ImImPyImPy-y-ImPyHpPyPy
	269)	5'-W G G A C T W-3'	ІтІтРуРуНр-ү-РуІтНрРуРу
	270)	5'-W G G A C A W-3'	ІтПтРуРуРу-ү-НрІтНрРуРу
	271)	5'-W G G A C G W-3'	ImImPyPyIm-y-PyImHpPyPy
35	272)	5'-W G G A C C W-3'	ImImPyPyPy-y-ImImHpPyPy

_		TABLE 21: 10-ring Hairpin Polyamides for	recognition of 7-bp 5'-WGGSNNW-3'
_		DNA sequence	aromatic amino acid sequence
	273)	5'-W G G G T T W-3'	ІмІмІмНрНр-ү-РуРуРуРуРу
5	274)	5'-W G G G T A W-3'	ІшІшшырру-ү-НрРуРуРуРу
	275)	5'-W G G G T G W-3'	ImImImHpIm-y-PyPyPyPyPy
	276)	5'-W G G G T C W-3'	ImImImHpPy-7-ImPyPyPyPy
	277)	5'-W G G G A T W-3'	${\tt ImImImPyHp-\gamma-PyHpPyPyPy}$
	278)	5'-W G G G A A W-3'	${\tt ImImImPyPy-\gamma-HpHpPyPyPy}$
10	279)	5'-W G G G A G W-3'	ImImImPyIm-ү-РуНрРуРуРу
	280)	5'-W G G G A C W-3'	ImImImPyPy-y-ImHpPyPyPy
	281)	5'-W G G G G T W-3'	ImImImImHp-7-PyPyPyPyPy
	282)	5'-W G G G G A W-3'	ImImImImPy-y-HpPyPyPyPy
	283)	5'-W G G G C T W-3'	ImImImPyHp-y-PyImPyPyPy
15	284)	5'-W G G G C A W-3'	ImImImPyPy-7-HpImPyPyPy
	285)	5'-W G G C T T W-3'	${\tt ImImPyHpHp-\gamma-PyPyImPyPy}$
	286)	5'-W G G C T A W-3'	ІтІтРуНрРу-ү-НрРуІтРуРу
	287)	5'-W G G C T G W-3'	ImImPyHpIm-y-PyPyImPyPy
	288)	5'-W G G C T C W-3'	ImImPyHpPy-y-ImPyImPyPy
20	289)	5'-W G G C A T W-3'	ІтітРуРуНр-ү-РуНрІтРуРу
	290)	5'-W G G C A A W-3'	ImImPyPyPy-7-HpHpImPyPy
	291)	5'-W G G C A G W-3'	ImImPyPyIm-7-PyHpImPyPy
	292)	5'-W G G C A C W-3'	ImImPyPyPy-7-ImHpImPyPy
	293)	5'-W G G C G T W-3'	ImImPyImHp-7-PyPyImPyPy
25	294)	5'-W G G C G A W-3'	ImImPyImPy-7-HpPyImPyPy
	295)	5'-W G G C C T W-3'	ImImPyPyHp-y-PyImImPyPy
	296)	5'-W G G C C A W-3'	ImImPyPyPy-7-HpImImPyPy
	G17)	5'-W G G G G W-3'	ImImImIm-y-PyPyPyPyPy
	G18)	5'-W G G G G C W-3'	ImImImPy-7-ImPyPyPyPy
30	G19)	5'-W G G G C G W-3'	ImImImPyIm-y-PyImPyPyPy
	G20)	5'-W G G G C C W-3'	ImImImPyPy-y-ImImPyPyPy
	G21)	5'-W G G C G G W-3'	ImImPyImIm-y-PyPyImPyPy
	G22)	5'-W G G C G C W-3'	ImImPyImPy-y-ImPyImPyPy
	G23)	5'-W G G C C G W-3'	ImImPyPyIm-y-PyImImPyPy
35	G24)	5'-W G G C C C W-3'	ImImPyPyPy-y-ImImImPyPy

-	,	TABLE 22: 10-ring Hairpin Polyamides for DNA sequence	recognition of 7-bp 5'-WGTWNNW-3' aromatic amino acid sequence
=	297)	5'-W G T T T W-3'	ІшНрНрНрНр-ү-РуРуРуРу
5	298)	5'-W G T T T A W-3'	ІмНрНрНрРу-ү-НрРуРуРу
	299)	5'-W G T T T G W-3'	ІмНрНрНрІм-ү-РуРуРуРу
	300)	5'-W G T T T C W-3'	Імнрнрнрру-ү-імруруруру
	301)	5'-W G T T A T W-3'	ІмнрнрРунр-ү-РунрРуРуРу
	302)	5'-W G T T A A W-3'	ІмНрНрРуРу-ү-НрНрРуРуРу
10	303)	5'-W G T T A G W-3'	ІmHpHpPyIm-y-РуHpРуРуРу
	304)	5'-W G T T A C W-3'	Ішнрнрруру-ү-Ішнрруруру
	305)	5'-W G T T G T W-3'	Ітнрнрітнр-ү-РуРуРуРу
	306)	5'-W G T T G A W-3'	ІmHpHpImPy-ү-HpРуРуРуРу
	307)	5'-W G T T G G W-3'	ImHpHpImIm-ү-РуРуРуРуРу
15	308)	5'-W G T T G C W-3'	ImHpHpImPy-ү-ImPyPyPyPy
	309)	5'-W G T T C T W-3'	ІтнрнрРунр-ү-РуІтруРуРу
	310)	5'-W G T T C A W-3'	ІтнрнрРуРу-ү-нрІтРуРуРу
	311)	5'-W G T T C G W-3'	ImHpHpPyIm-γ-PyImPyPyPy
	312)	5'-W G T T C C W-3'	ImHpHpPyPy-ү-ImImPyPyPy
20	313)	5'-W G T A T T W-3'	ІтНрРуНрНр-ү-РуРуНрРуРу
	314)	5'-W G T A T A W-3'	Ӏ ҭҤҏҎӯӉҏҎу-ү-НҏҎӯӉҏҎӯҎу
	315)	5'-W G T A T G W-3'	ІтнрРунрІт-ү-РуРунрРуРу
	316)	5'-W G T A T C W-3'	ІтнрРунрРу-ү-ІтРунрРуРу
	317)	5'-W G T A A T W-3'	ІтнрРуРунр-ү-РунрнрРуРу
25	318)	5'-W G T A A A W-3'	ІтнрРуРуРу-ү-нрнрнрРуРу
	319)	5'-W G T A A G W-3'	ІшНрРуРуІш-ү-РуНрНрРуРу
	320)	5'-W G T A A C W-3'	ІмНрРуРуРу-ү-ІмНрНрРуРу
	321)	5'-W G T A G T W-3'	ІтнрРуІтнр-ү-РуРунрРуРу
	322)	5'-W G T A G A W-3'	ІмНрРуІмРу-ү-НрРуНрРуРу
30	323)	5'-W G T A G G W-3'	ImHpPyImIm-ү-РуРуНрРуРу
	324)	5'-W G T A G C W-3'	ІшНрРуІшРу-ү-ІшРуНрРуРу
	325)	5'-W G T A C T W-3'	ІтнрРуРуНр-ү-РуІтнрРуРу
	326)	5'-W G T A C A W-3'	ІтнрРуРуРу-ү-НрІтнрРуРу
	327)	5'-W G T A C G W-3'	ImHpPyPyIm-y-PyImHpPyPy
35	328)	5'-W G T A C C W-3'	ImHpPyPyPy-y-ImImHpPyPy

	TABLE 23: 10-ring Hairpin Polyamide DNA sequence	aromatic amino acid sequence
329)	5'-W G T G T T W-3'	ІтнрІтнрнр-ү-РуРуРуРуРу
330)	5'-W G T G T A W-3'	ImHpImHpPy-ү-HpPyPyPyPy
331)	5'-W G T G T G W-3'	ImHpImHpIm-γ-PyPyPyPyPy
332)	5'-W G T G T C W-3'	ImHpImHpPy-γ-ImPyPyPyPy
333)	5'-W G T G A T W-3'	ImHpImPyHp-y-PyHpPyPyPy
334)	5'-W G T G A A W-3'	ImHpImPyPy-y-HpHpPyPyPy
335)	5'-W G T G A G W-3'	ImHpImPyIm-y-PyHpPyPyPy
336)	5'-W G T G A C W-3'	ImHpImPyPy-y-ImHpPyPyPy
337)	5'-W G T G G T W-3'	ImHpImImHp-y-PyPyPyPyPy
338)	5'-W G T G G A W-3'	ImHpImImPy-γ-HpPyPyPyPy
339)	5'-W G T G C T W-3'	ImHpImPyHp-y-PyImPyPyPy
340)	5'-W G T G C A W-3'	ІмНрІмРуРу-ү-НрІмРуРуРу
341)	5'-W G T G G G W-3'	ImHpImImIm-γ-PyPyPyPyPy
342)	5'-W G T G G C W-3'	Ітнрітітру-ү-ітруруруру
343)	5'-W G T G C G W-3'	ImHpImPyIm-γ-PyImPyPyPy
344)	5'-W G T G C C W-3'	ImHpImPyPy-γ-ImImPyPyPy
345)	5'-W G T C T T W-3'	ІмНрРуНрНр-ү-РуРуІмРуРу
346)	5'-W G T C T A W-3'	ІтнрРунрРу-ү-нрРуІтРуРу
347)	5'-W G T C T G W-3'	ImHpPyHpIm-y-PyPyImPyPy
348)	5'-W G T C T C W-3'	ІтнрРунрРу-ү-ІтРуІтРуРу
349)	5'-W G T C A T W-3'	ІтНрРуРуНр-ү-РуНрІтРуРу
350)	5'-W G T C A A W-3'	ІтнрРуРуРу-ү-нрНрІтРуРу
351)	5'-W G T C A G W-3'	ІтірРуРуІт-ү-РуНрІтРуРу
352)	5'-W G T C A C W-3'	ІтнрРуРуРу-ү-ІтнрІтРуРу
353)	5'-W G T C G T W-3'	ImHpPyImHp-y-PyPyImPyPy
354)	5'-W G T C G A W-3'	ImHpPyImPy-7-HpPyImPyPy
355)	5'-W G T C C T W-3'	ІтнрРуРуНр-ү-РуІтІтРуРу
356)	5'-W G T C C A W-3'	ImHpPyPyPy-y-HpImImPyPy
357)	5'-W G T C G G W-3'	ImHpPyImIm-7-PyPyImPyPy
358)	5'-W G T C G C W-3'	ImHpPyImPy-7-ImPyImPyPy
359)	5'-W G T C C G W-3'	ImHpPyPyIm-y-PyImImPyPy
360)	5'-W G T C C C W-3'	ImHpPyPyPy-y-ImImImPyPy

		TABLE 24: 10-ring Hairpin Polyamides for	recognition of 7-bp 5'-WGAWNNW-3'
F		DNA sequence	aromatic amino acid sequence
	361)	5'-W G A T T T W-3'	ІтРуНрНрНр-ү-РуРуРуНрРу
5	362)	5'-W G A T T A W-3'	ІшБУНЬБЬ - 1- НЬБЬ В В В В В В В В В В В В В В В В В В
	363)	5'-W G A T T G W-3'	ІтРуНрНрІт-ү-РуРуРуНрРу
	364)	5'-W G A T T C W-3'	ІтРуНрНрРу-ү-ІтРуРуНрРу
	365)	5'-W G A T A T W-3'	ІтРуНрРуНр-ү-РуНрРуНрРу
	366)	5'-W G A T A A W-3'	ІмРуНрРуРу-ү-НрНрРуНрРу
10	367)	5'-W G A T A G W-3'	ІшБУНЪБА ІШ-7-БУНЪБАНЪБА
	368)	5'-W G A T A C W-3'	ІтРуНрРуРу-ү-ІтНрРуНрРу
	369)	5'-W G A T G T W-3'	ІшБАНБІШНБ-А-БАБАНБЬ
	370)	5'-W G A T G A W-3'	ІтРунрітРу-ү-нрРуРунрРу
	371)	5'-W G A T G G W-3'	ImРуНрІmІm-ү-РуРуРуНрРу
15	372)	5'-W G A T G C W-3'	ІшБУНБІшБА-4-ІшБАБАНББА
	373)	5'-W G A T C T W-3'	ІшБУНББАНБ-4-БУІшБУНББА
	374)	5'-W G A T C A W-3'	ІмРуНрРуРу-ү-НрІмРуНрРу
	375)	5'-W G A T C G W-3'	ImPyHpPyIm-7-PyImPyHpPy
	376)	5'-W G A T C C W-3'	ImPyHpPyPy~7-ImImPyHpPy
20	377)	5'-W G A A T T W-3'	ІмРуРуНрНр-ү-РуРуНрНрРу
	378)	5'-W G A A T A W-3'	ІмРуРуНрРу-ү-НрРуНрНрРу
	379)	5'-W G A A T G W-3'	ІмРуРуНрІм-ү-РуРуНрНрРу
	380)	5'-W G A A T C W-3'	ІмРуРуНрРу-ү-ІмРуНрНрРу
	381)	5'-W G A A A T W-3'	ІтРуРуРуНр-ү-РуНрНрРу
25	382)	5'-W G A A A A W-3'	ІшБУБУБУБУ-7-НФНФНФББ
	383)	5'-W G A A A G W-3'	ImРуРуРуIm-γ-РуНрНрРРу
	384)	5'-W G A A A C W-3'	${\tt ImPyPyPyPy-\gamma-ImHpHpHpPy}$
	385)	5'-W G A A G T W-3'	${\tt ImPyPyImHp-\gamma-PyPyHpHpPy}$
	386)	5'-W G A A G A W-3'	ImРуРуImРу-ү-НрРуНрНрРу
30	387)	5'-W G A A G G W-3'	ImPyPyImIm-7-PyPyHpHpPy
	388)	5'-W G A A G C W-3'	ImPyPyImPy-y-ImPyHpHpPy
	389)	5'-W G A A C T W-3'	ІтРУРУРУНР-ү-РУІтНРНРРУ
	390)	5'-W G A A C A W-3'	ІмРуРуРуРу-ү-НрІмНрНрРу
	391)	5'-W G A A C G W-3'	ImPyPyPyIm-7-PyImHpHpPy
35	392)	5'-W G A A C C W-3'	ImРуРуРуРу-ү-ImImНpНpРy

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		DNA sequence	for recognition of 7-bp 5'-WGASNNW-3' aromatic amino acid sequence
_	393)	5'-W G A G T T W-3'	ІтРуІтНрНр-ү-РуРуРуНрРу
	394)	5'-W G A G T A W-3'	ІшБУІшНЪБА-4-НЪБАБЬ
	395)	5'-W G A G T G W-3'	ImPyImHpIm-y-PyPyPyHpPy
	396)	5'-W G A G T C W-3'	ImPyImHpPy-y-ImPyPyHpPy
	397)	5'-W G A G A T W-3'	ІтРуІтРуНр-ү-РуНрРуНрРу
	398)	5'-W G A G A A W-3'	ІтРуІтРуРу-ү-НрНрРуНрРу
	399)	5'-W G A G A G W-3'	ImPyImPyIm-y-PyHpPyHpPy
	400)	5'-W G A G A C W-3'	ImPyImPyPy-7-ImHpPyHpPy
	401)	5'-W G A G G T W-3'	ImPyImImHp-ү-РуРуРуНpРy
	402)	5'-W G A G G A W-3'	${\tt ImPyImImPy-}\gamma{\tt -HpPyPyHpPy}$
	403)	5'-W G A G C T W-3'	${\tt ImPyImPyHp-\gamma-PyImPyHpPy}$
	404)	5'-W G A G C A W-3'	ImРуImРуРу-ү-НрImРуНрРу
	405)	5'-W G A G G G W-3'	ImPyImImIm-7-PyPyPyHpPy
	406)	5'-W G A G G C W-3'	ImPyImImPy-7-ImPyPyHpPy
	407)	5'-W G A G C G W-3'	ImPyImPyIm-y-PyImPyHpPy
	408)	5'-W G A G C C W-3'	ImPyImPyPy-7-ImImPyHpPy
	409)	5'-W G A C T T W-3'	ІтРуРуНрНр-ү-РуРуІтНрРу
	410)	5'-W G A C T A W-3'	ImРуРуНрРу-ү-НрРуImНpРу
	411)	5'-W G A C T G W-3'	${\tt ImPyPyHpIm-\gamma-PyPyImHpPy}$
	412)	5'-W G A C T C W-3'	ImPyPyHpPy-7-ImPyImHpPy
	413)	5'-W G A C A T W-3'	ІтРуРуРуНр-ү-РуНрІтНРРу
	414)	5'-W G A C A A W-3'	${\tt ImPyPyPyPy-\gamma-HpHpImHpPy}$
	415)	5'-W G A C A G W-3'	ІтруРуРуІт-ү-РуНрІтНРРу
	416)	5'-W G A C A C W-3'	${\tt ImPyPyPyPy-\gamma-ImHpImHpPy}$
	417)	5'-W G A C G T W-3'	${\tt ImPyPyImHp-\gamma-PyPyImHpPy}$
	418)	5'-W G A C G A W-3'	${\tt ImPyPyImPy-\gamma-HpPyImHpPy}$
	419)	5'-W G A C C T W-3'	${\tt ImPyPyPyHp-\gamma-PyImImHpPy}$
	420)	5'-W G A C C A W-3'	${\tt ImPyPyPyPy-\gamma-HpImImHpPy}$
	421)	5'-W G A C G G W-3'	ImPyPyImIm-y-PyPyImHpPy
	422)	5'-W G A C G C W-3'	ImPyPyImPy-7-ImPyImHpPy
	423)	5'-W G A C C G W-3'	ImPyPyPyIm-7-PyImImHpPy
	424)	5'-W G A C C C W-3'	ImPyPyPyPy-y-ImImImHpPy

		TABLE 26: 10-ring Hairpin Polyamides for	recognition of 7-bp 5'-WGCWNNW-3'
		DNA sequence	aromatic amino acid sequence
	425)	5'-W G C T T T W-3'	ІтРунрнрнр-ү-РуруруІтРу
5	426)	5'-W G C T T A W-3'	ІтРунрнрРу-ү-нрРуРуІтРу
	427)	5'-W G C T T G W-3'	ІтРунрнріт-ү-Руруруітру
	428)	5'-W G C T T C W-3'	ІтРунрнрРу-ү-ІтРуРуІтРу
	429)	5'-W G C T A T W-3'	ІтРунрРунр-ү-РунрРуІтРу
	430)	5'-W G C T A A W-3'	ІтРунрРуРу-ү-нрнрРуІтРу
10	431)	5'-W G C T A G W-3'	ImPyHpPyIm-y-PyHpPyImPy
	432)	5'-W G C T A C W-3'	ІтРунрРуРу-ү-ІтнрРуІтРу
	433)	5'-W G C T G T W-3'	${\tt ImPyHpImHp-\gamma-PyPyPyImPy}$
	434)	5'-W G C T G A W-3'	${\tt ImPyHpImPy-\gamma-HpPyPyImPy}$
	435)	5'-W G C T G G W~3'	ImPyHpImIm-y-PyPyPyImPy
15	436)	5'-W G C T G C W-3'	ImPyHpImPy-y-ImPyPyImPy
	437)	5'-W G C T C T W-3'	ImPyHpPyHp-7-PyImPyImPy
	438)	5'-W G C T C A W-3'	ImPyHpPyPy-y-HpImPyImPy
	439)	5'-W G C T C G W-3'	ImPyHpPyIm-y-PyImPyImPy
	440)	5'-W G C T C C W-3'	ImPyHpPyPy-7-ImImPyImPy
20	441)	5'-W G C A T T W-3'	ІтРуРуНрНр-ү-РуРуНрІтРу
	442)	5'-W G C A T A W-3'	ІтРуРуНрРу-ү-НрРуНрІтРу
	443)	5'-W G C A T G W-3'	ІтРРУНрІт-ү-РУРУНрІтРУ
	444)	5'-W G C A T C W-3'	ImPyPyHpPy-y-ImPyHpImPy
	445)	5'-W G C A A T W-3'	ІтРРУРУНР-ү-РУНРНРІТРУ
25	446)	5'-W G C A A A W-3'	${\tt ImPyPyPyPy-\gamma-HpHpHpImPy}$
	447)	5'-W G C A A G W-3'	ImPyPyPyIm-y-PyHpHpImPy
	448)	5'-W G C A A C W-3'	ImPyPyPyPy-y-ImHpHpImPy
	449)	5'-W G C A G T W-3'	ImPyPyImHp-y-PyPyHpImPy
	450)	5'-W G C A G A W-3'	ImPyPyImPy-7-HpPyHpImPy
30	451)	5'-W G C A G G W-3'	ImPyPyImIm-y-PyPyHpImPy
	452)	5'-W G C A G C W-3'	ImPyPyImPy-y-ImPyHpImPy
	453)	5'-W G C A C T W-3'	ImPyPyPyHp-7-PyImHpImPy
	454)	5'-W G C A C A W-3'	${\tt ImPyPyPyPy-\gamma-HpImHpImPy}$
	455)	5'-W G C A C G W-3'	ImPyPyPyIm-7-PyImHpImPy
35	456)	5'-W G C A C C W-3'	ImPyPyPyPy-y-ImImHpImPy

-		TABLE 27: 10-ring Hairpin Polyamide	es for recognition of 7-bp 5'-WGCSNNW-3'
		DNA sequence	aromatic amino acid sequence
	457)	5'-W G C G T T W-3'	ImPyImHpHp-y-PyPyPyImPy
5	458)	5'-W G C G T A W-3'	ImPyImHpPy-y-HpPyPyImPy
	459)	5'-W G C G T G W-3'	ImPyImHpIm-7-PyPyPyImPy
	460)	5'-W G C G T C W-3'	ImPyImHpPy-7-ImPyPyImPy
	461)	5'-W G C G A T W-3'	ImPyImPyHp-y-PyHpPyImPy
	462)	5'-W G C G A A W-3'	ImPyImPyPy-7-HpHpPyImPy
10	463)	5'-W G C G A G W-3'	ImPyImPyIm-y-PyHpPyImPy
	464)	5'-W G C G A C W-3'	ImPyImPyPy-y-ImHpPyImPy
	465)	5'-W G C G G T W-3'	ImPyImImHp-y-PyPyPyImPy
	466)	5'-W G C G G A W-3'	ImPyImImPy-7-HpPyPyImPy
	467)	5'-W G C G C T W-3'	ImPyImPyHp-y-PyImPyImPy
15	468)	5'-W G C G C A W-3'	ImPyImPyPy-7-HpImPyImPy
	469)	5'-W G C C T T W-3'	ImPyPyHpHp-y-PyPyImImPy
	470)	5'-W G C C T A W-3'	${\tt ImPyPyHpPy-}\gamma{\tt -HpPyImImPy}$
	471)	5'-W G C C T G W-3'	ImPyPyHpIm-7-PyPyImImPy
	472)	5'-W G C C T C W-3'	ImPyPyHpPy-y-ImPyImImPy
20	473)	5'-W G C C A T W-3'	ImPyPyPyHp-y-PyHpImImPy
	474)	5'-W G C C A A W-3'	ImPyPyPyPy-7-HpHpImImPy
	475)	5'-W G C C A G W-3'	ImPyPyPyIm-y-PyHpImImPy
	476)	5'-W G C C A C W-3'	ImPyPyPyPy-y-ImHpImImPy
	477)	5'-W G C C G T W-3'	ImPyPyImHp-7-PyPyImImPy
25	478)	5'-W G C C G A W-3'	ImPyPyImPy-7-HpPyImImPy
	479)	5'-W G C C C T W-3'	ImPyPyPyHp-7-PyImImImPy
	480)	5'-W G C C C A W-3'	ImPyPyPyPy-7-HpImImImPy
	G25)	5'-W G C G G G W-3'	ImPyImImIm-y-PyPyPyImPy
	G26)	5'-W G C G G C W-3'	ImPyImImPy-7-ImPyPyImPy
30	G27)	5'-W G C G C G W-3'	ImPyImPyIm-γ-PyImPyImPy
	G28)	5'-W G C G C C W-3'	ImPyImPyPy-7-ImImPyImPy
	G29)	5'-W G C C G G W-3'	ImPyPyImIm-y-PyPyImImPy
	G30)	5'-W G C C G C W-3'	ImPyPyImPy-7-ImPyImImPy
	G31)	5'-W G C C C G W-3'	ImPyPyPyIm-y-PyImImImPy
35	G32)	5'-W G C C C C W-3'	ImPyPyPyPy-y-ImImImImPy

	7	TABLE 28: 10-ring Hairpin Polyamides for	recognition of 7-bp 5'-WCGWNNW-3'
		DNA sequence	aromatic amino acid sequence
	481)	5'-W C G T T T W-3'	РуІмНрНрНр-ү-РуРуРуРуІм
5	482)	5'-W C G T T A W-3'	РуІшНрНрРу-ү-НрРуРуРуІш
	483)	5'-W C G T T G W-3'	PyImHpHpIm-y-PyPyPyPyIm
	484)	5'-W C G T T C W-3'	РуІтНрНрРу-ү-ІтРуРуРуІт
	485)	5'-W C G T A T W-3'	РуІтНрРуНр-ү-РуНрРуРуІт
	486)	5'-W C G T A A W-3'	РуІтНрРуРу-ү-НрНрРуРуІт
10	487)	5'-W C G T A G W-3'	РуІтНрРуІт-ү-РуНрРуРуІт
	488)	5'-W C G T A C W-3'	PyImHpPyPy-y-ImHpPyPyIm
	489)	5'-W C G T G T W-3'	PyImHpImHp-y-PyPyPyPyIm
	490)	5'-W C G T G A W-3'	PyImHpImPy-7-HpPyPyPyIm
	491)	5'-W C G T G G W-3'	PyImHpImIm-7-PyPyPyPyIm
15	492)	5'-W C G T G C W-3'	PyImHpImPy-7-ImPyPyPyIm
	493)	5'-W C G T C T W-3'	РуІтНрРуНр-ү-РуІтРуРуІт
	494)	5'-W C G T C A W-3'	PyImHpPyPy-y-HpImPyPyIm
	495)	5'-W C G T C G W-3'	PyImHpPyIm-y-PyImPyPyIm
	496)	5'-W C G T C C W-3'	PyImHpPyPy-y-ImImPyPyIm
20	497)	5'-W C G A T T W-3'	РуІтРуНрНр-ү-РуРуНрРуІті
	498)	5'-W C G A T A W-3'	PyImPyHpPy-y-HpPyHpPyIm
	499)	5'-W C G A T G W-3'	РуІтРуНрІт-ү-РуРуНрРуІт
	500)	5'-W C G A T C W-3'	PyImPyHpPy-7-ImPyHpPyIm
	501)	5'-W C G A A T W-3'	PyImPyPyHp-y-PyHpHpPyIm
25	502)	5'-W C G A A A W-3'	РуІтРуРуРу-ү-НрНрНрРуІт
	503)	5'-W C G A A G W-3'	PylmPyPylm-7-PyHpHpPylm
	504)	5'-W C G A A C W-3'	PyImPyPyPy-7-ImHpHpPyIm
	505)	5'-W C G A G T W-3'	PyImPyImHp-7-PyPyHpPyIm
	506)	5'-W C G A G A W-3'	PyImPyImPy-7-HpPyHpPyIm
30	507)	5'-W C G A G G W-3'	PyImPyImIm-y-PyPyHpPyIm
	508)	5'-W C G A G C W-3'	PyImPyImPy-7-ImPyHpPyIm
	509)	5'-W C G A C T W-3'	PyImPyPyHp-y-PyImHpPyIm
	510)	5'-W C G A C A W-3'	PyImPyPyPy-y-HpImHpPyIm
	511)	5'-W C G A C G W-3'	PyImPyPyIm-γ-PyImHpPyIm
35	512)	5'-W C G A C C W-3'	РуІтРуРуРу-ү-ІтІтНрРуІт

_		TABLE 29: 10-ring Hairpin Polyamides for	recognition of 7-bp 5'-WCGSNNW-3'
1		DNA sequence	aromatic amino acid sequence
	513)	5'-W C G G T T W-3'	PyImImHpHp-y-PyPyPyPyIm
	514)	5'-W C G G T A W-3'	РуІтітнрРу-ү-НрРуРуРуІт
	515)	5'-W C G G T G W-3'	PyImImHpIm-7-PyPyPyPyIm
	516)	5'-W C G G T C W-3'	PyImImHpPy-y-ImPyPyPyIm
	517)	5'-W C G G A T W-3'	PyImImPyHp-7-PyHpPyPyIm
	518)	5'-W C G G A A W-3'	PyImImPyPy-γ-HpHpPyPyIm
)	519)	5'-W C G G A G W-3'	PyImImPyIm-7-PyHpPyPyIm
	520)	5'-W C G G A C W-3'	PyImImPyPy-γ-ImHpPyPyIm
	521)	5'-W C G G G T W-3'	PyImImImHp-γ-PyPyPyPyIm
	522)	5'-W C G G G A W-3'	РуІтІттру-ү-НрРуРуРуІт
	523)	5'-W C G G C T W-3'	PyImImPyHp-γ-PyImPyPyIm
i	524)	5'-W C G G C A W-3'	РуІтІтРуРу-ү-НрІтРуРуІт
	525)	5'-W C G C T T W-3'	PyImPyHpHp-γ-PyPyImPyIm
	526)	5'-W C G C T A W-3'	${ t PyImPyHpPy-\gamma-HpPyImPyIm}$
	527)	5'-W C G C T G W-3'	PyImPyHpIm-γ-PyPyImPyIm
	528)	5'-W C G C T C W-3'	PyImPyHpPy-γ-ImPyImPyIm
)	529)	5'-W C G C A T W-3'	РуІмРуРуНр-ү-РуНрІмРуІм
	530)	5'-W C G C A A W-3'	РуІmРуРуРу-ү-HpHpImРуIm
	531)	5'-W C G C A G W-3'	PyImPyPyIm-y-PyHpImPyIm
	532)	5'-W C G C A C W-3'	PyImPyPyPy-7-ImHpImPyIm
	533)	5'-W C G C G T W-3'	PyImPyImHp-y-PyPyImPyIm
5	534)	5'-W C G C G A W-3'	PyImPyImPy-7-HpPyImPyIm
	535)	5'-W C G C C T W-3'	PylmPyPyHp-γ-PylmImPyIm
	536)	5'-W C G C C A W-3'	PyImPyPyPy-y-HpImImPyIm
	G33)	5'-W C G G G G W-3'	PyImImIm-y-PyPyPyPyIm
	G34)	5'-W C G G G C W-3'	PyImImImPy-γ-ImPyPyPyIm
)	G35)	5'-W C G G C G W-3'	PyImImPyIm-7-PyImPyPyIm
	G36)	5'-W C G G C C W-3'	PyImImPyPy-7-ImImPyPyIm
	G37)	5'-W C G C G G W-3'	PyImPyImIm-7-PyPyImPyIm
	G38)	5'-W C G C G C W-3'	PyImPyImPy-7-ImPyImPyIm
	G39)	5'-W C G C C G W-3'	PyImPyPyIm-7-PyImImPyIm
5	G40)	5'-W C G C C C W-3'	PyImPyPyPy-γ-ImImImPyIm

-		TABLE 30: 10-ring Hairpin Polyamides for	recognition of 7-bp 5'-WCTWNNW-3'
=		DNA sequence	aromatic amino acid sequence
	537)	5'-W C T T T T W-3'	Рунрнрнр-ү-РуРуРуРуІт
5	538)	5'-W C T T T A W-3'	РуНрНрРу-ү-НрРуРуРуІт
	539)	5'-W C T T T G W-3'	РуНрНрНрім-ү-РуРуРуРуІм
	540)	5'-W C T T T C W-3'	Рунрнрру-ү-ІшРуРуРуІш
	541)	5'-W C T T A T W-3'	РунрнрРунр-ү-РунрРуРуІт
	542)	5'-W C T T A A W-3'	РуНрНрРуРу-ү-НрНрРуРуIm
10	543)	5'-W C T T A G W-3'	РунрнрРуІт-ү-РунрРуРуІт
	544)	5'-W C T T A C W-3'	РуНрНрРуРу-ү-ІmНрРуРуІm
	545)	5'-W C T T G T W-3'	РуНрНрІмНр-ү-РуРуРуРуІм
	546)	5'-W C T T G A W-3'	РуНрНрІmРу-ү-НрРуРуРуІm
	547)	5'-W C T T G G W-3'	PyHpHpImIm-y-PyPyPyPyIm
15	548)	5'-W C T T G C W-3'	PyHpHpImPy-y-ImPyPyPyIm
	549)	5'-W C T T C T W-3'	РуНрНрРуНр-ү-РуІтРуРуІт
	550)	5'-W C T T C A W-3'	РуНрНрРуРу-ү-НрІmРуРуІm
	551)	5'-W C T T C G W-3'	РуНрНрРуІт-ү-РуІтРуРуІт
	552)	5'-W C T T C C W-3'	РуНрНрРуРу-ү-ІтІтРуРуІт
20	553)	5'-W C T A T T W-3'	РуНрРуНрНр-ү-РуРуНрРуІт
	554)	5'-W C T A T A W-3'	РуНрРуНрРу-ү-НрРуНрРуIm
	555)	5'-W C T A T G W-3'	РунрРунрім-ү-РуРунрРуім
	556)	5'-W C T A T C W-3'	РуНрРуНрРу-ү-ІmРуНрРуІm
	557)	5'-W C T A A T W-3'	РуНрРуРуНр-ү-РуНрНрРуІт
25	558)	5'-W C T A A A W-3'	РуНрРуРуРу-ү-НрНрНрРуІт
	559)	5'-W C T A A G W-3'	РуНрРуРуІм-ү-РуНрНрРуІм
	560)	5'-W C T A A C W-3'	РуНрРуРуРу-ү-ІмНрНрРуІм
	561)	5'-W C T A G T W-3'	РуНрРуІтНр-ү-РуРуНрРуІт
	562)	5'-W C T A G A W-3'	РуНрРуІmРу-ү-НрРуНрРуІm
30	563)	5'-W C T A G G W-3'	РуНрРуІтіт-ү-РуРуНрРуІт
	564)	5'-W C T A G C W-3'	РуНрРуImРу-ү-ImРуНрРуIm
	565)	5'-W C T A C T W-3'	РунрРуРунр-ү-РуІмнрРуІм
	566)	5'-W C T A C A W-3'	РуНрРуРуРу-ү-НрІmНрРуІm
	567)	5'-W C T A C G W-3'	PyHpPyPyIm-y-PyImHpPyIm
35	568)	5'-W C T A C C W-3'	РунрРуРуРу-ү-ІтІтрРуІт

		TABLE 31: 10-ring Hairpin Polyamides for DNA sequence	or recognition of 7-bp 5'-WCTSNNW-3' aromatic amino acid sequence
_	569)	5'-W C T G T T W-3'	РуНрІтнрнр-ү-РуРуРуРуІт
	570)	·5'-W C T G T A W-3'	PyHpImHpPy-y-HpPyPyPyIm
	571)	5'-W C T G T G W-3'	PyHpImHpIm-y-PyPyPyPyIm
	572)	5'-W C T G T C W-3'	PyHpImHpPy-y-ImPyPyPyIm
	573)	5'-W C T G A T W-3'	PyHpImPyHp-γ-PyHpPyPyIm
	574)	5'-W C T G A A W-3'	PyHpImPyPy-y-HpHpPyPyIm
	575)	5'-W C T G A G W-3'	PyHpImPyIm-y-PyHpPyPyIm
	576)	5'-W C T G A C W-3'	PyHpImPyPy-γ-ImHpPyPyIm
	577)	5'-W C T G G T W-3'	PyHpImImHp-y-PyPyPyPyIm
	578)	5'-W C T G G A W-3'	PyHpImImPy-γ-HpPyPyPyIm
	579)	5'-W C T G C T W-3'	PyHpImPyHp-Y-PyImPyPyIm
	580)	5'-W C T G C A W-3'	PyHpImPyPy-y-HpImPyPyIm
	581)	5'-W C T G G G W-3'	PyHpImImIm-γ-PyPyPyPyIm
	582)	5'-W C T G G C W-3'	PyHpImImPy-γ-ImPyPyPyIm
	583)	5'-W C T G C G W-3'	PyHpImPyIm-y-PyImPyPyIm
	584)	5'-W C T G C C W-3'	PyHpImPyPy-γ-ImImPyPyIm
	585)	5'-W C T C T T W-3'	РуНрРуНрНр-ү-РуРуІмРуІм
	586)	5'-W C T C T A W-3'	РуНрРуНрРу-ү-НрРуІтРуІт
	587)	5'-W C T C T G W-3'	РуНрРуНрІш-ү-РуРуІшРуІш
	588)	5'-W C T C T C W-3'	РуНрРуНрРу-ү-ІmРуІmРуІm
	589)	5'-W C T C A T W-3'	РуНрРуРуНр~ү-РуНрІmРуІm
	590)	5'-W C T C A A W-3'	РуНрРуРуРу-ү-НрНрІmРуІm
	591)	5'-W C T C A G W-3'	·РуНрРуРуІm-ү-РуНрІmРуІm
	592)	5'-W C T C A C W-3'	РуНрРуРуРу-ү-ІтНрІтРуІт
	593)	5'-W C T C G T W-3'	PyHpPyImHp-y-PyPyImPyIm
	594)	5'-W C T C G A W-3'	РуНрРуІmРу-ү-НрРуІmРуІm
	595)	5'-W C T C C T W-3'	РуНрРуРуНр-ү-РуІтІТРУІт
	596)	5'-W C T C C A W-3'	РуНрРуРуРу-ү-HpImImPyIm
	597)	5'-W C T C G G W-3'	PyHpPyImIm-y-PyPyImPyIm
	598)	5'-W C T C G C W-3'	PyHpPyImPy-y-ImPyImPyIm
	599)	5'-W C T C C G W-3'	PyHpPyPyIm-y-PyImImPyIm
	600)	5'-W C T C C C W-3'	PyHpPyPyPy-γ-ImImImPyIm

	DNA sequence	aromatic amino acid sequence
601)	5'-W C A T T T W-3'	РуРуНрНрНр-ү-РуРуРуНрІт
602)	'5'-W C A T T A W-3'	РуРуНрНрРу-ү-НрРуРуНрІт
603)	5'-W C A T T G W-3'	РуРуНрНрІт-ү-РуРуРуНрІт
604)	5'-W C A T T C W-3'	РуРуНрНрРу-ү-ІmРуРуНрІm
605)	5'-W C A T A T W-3'	РуРуНрРуНр-ү-РуНрРуНрІт
606)	5'-W C A T A A W-3'	РуРуНрРуРу-ү-НрНрРуНрIm
607)	5'-W C A T A G W-3'	РуРуНрРуІт-ү-РуНрРуНрІт
608)	5'-W C A T A C W-3'	РуРуНрРуРу-ү-ImHpРуНpIm
609)	5'-W C A T G T W-3'	PyPyHpImHp-y-PyPyPyHpIm
610)	5'-W C A T G A W-3'	РуРуНрІтРу-ү-НрРуРуНрІт
611)	5'-W C A T G G W-3'	PyPyHpImIm-y-PyPyPyHpIm
612)	5'-W C A T G C W-3'	PyPyHpImPy-y-ImPyPyHpIm
613)	5'-W C A T C T W-3'	РуРуНрРуНр-ү-РуІмРуНрІм
614)	5'-W C A T C A W-3'	РуРуНрРуРу-ү-НрІmРуНрІm
615)	5'-W C A T C G W-3'	PyPyHpPyIm-y-PyImPyHpIm
616)	5'-W C A T C C W-3'	РуРуНрРуРу-ү-ІтПтРуНрІт
617)	5'-W C A A T T W-3'	РуРуРуНрНр-ү-РуРуНрНрІт
618)	5'-W C A A T A W-3'	РуРуРуНрРу-ү-НрРуНрНрІт
619)	5'-W C A A T G W-3'	РуРуРуНрІт-ү-РуРуНрНрІт
620)	5'-W C A A T C W-3'	PyPyPyHpPy-7-ImPyHpHpIm
621)	5'-W C A A A T W-3'	РуРуРуРуНр-ү-РуНрНрНрІм
622)	5'-W C A A A A W-3'	РуРуРуРуРу-ү-НрНрНрНрІт
623)	5'-W C A A A G W-3'	РуРуРуРуІт-ү-РуНрНрНрІт
624)	5'-W C A A A C W-3'	РуРуРуРуРу-ү-ІmНpНpНpІm
625)	5'-W C A A G T W-3'	PyPyPyImHp-y-PyPyHpHpIm
626)	5'-W C A A G A W-3'	РуРуРуІмРу-ү-НрРуНрНрІм
627)	5'-W C A A G G W-3'	PyPyPyImIm-y-PyPyHpHpIm
628)	5'-W C A A G C W-3'	PyPyPyImPy-y-ImPyHpHpIm
629)	5'-W C A A C T W-3'	РуРуРуРуНр-ү-РуІмНрНрІм
630)	5'-W C A A C A W-3'	РуРуРуРуРу-ү-НрІмНрНрІм
631)	5'-W C A A C G W-3'	PyPyPyPyIm-y-PyImHpHpIm
32)	5'-W C A A C C W-3'	РуРуРуРуРу-ү-ІтПтНрНрІт

		DNA sequence	for recognition of 7-bp 5'-WCASNNW-3'
=	633)		aromatic amino acid sequence
	\	5'-W C A G T T W-3'	РуРуІмНрНр-ү-РуРуРуНрІм
	634)	5'-W C A G T A W-3'	PyPyImHpPy-γ-HpPyPyHpIm
	635)	5'-W C A G T G W-3'	PyPyImHpIm-γ-PyPyPyHpIm
	636)	5'-W C A G T C W-3'	PyPyImHpPy-γ-ImPyPyHpIm
	637)	5'-W C A G A T W-3'	РуРуІтРуНр-ү-РуНрРуНрІт
	638)	5'-W C A G A A W-3'	PyPyImPyPy-γ-HpHpPyHpIm
	639)	5'-W C A G A G W-3'	PyPyImPyIm-y-PyHpPyHpIm
	640)	5'-W C A G A C W-3'	PyPyImPyPy-γ-ImHpPyHpIm
	641)	5'-W C A G G T W-3'	PyPyImImHp-7-PyPyPyHpIm
	642)	5'-W C A G G A W-3'	PyPyImImPy-y-HpPyPyHpIm
	643)	5'-W C A G C T W-3'	PyPyImPyHp-y-PyImPyHpIm
	644)	5'-W C A G C A W-3'	PyPyImPyPy-y-HpImPyHpIm
	645)	5'-W C A G G G W-3'	PyPyImImIm-y-PyPyPyHpIm
	646)	5'-W C A G G C W-3'	PyPyImImPy-y-ImPyPyHpIm
	647)	5'-W C A G C G W-3'	PyPyImPyIm-y-PyImPyHpIm
	648)	5'-W C A G C C W-3'	PyPyImPyPy-y-ImImPyHpIm
	649)	5'-W C A C T T W-3'	РуРуРуНрНр-ү-РуРуІтНрІт
	650)	5'-W C A C T A W-3'	РуРуРуНрРу-ү-НрРуІтНрІт
	651)	5'-W C A C T G W-3'	РуРуРуНрІт-ү-РуРуІтНрІт
	652)	5'-W C A C T C W-3'	PyPyPyHpPy-y-ImPyImHpIm
	653)	5'-W C A C A T W-3'	РуРуРуРуНр-ү-РуНрІтНрІт
	654)	5'-W C A C A A W-3'	РуРуРуРуРу-ү-НрНрІтНрІт
	655)	5'-W C A C A G W-3'	PyPyPyPyIm-y-PyHpImHpIm
	656)	5'-W C A C A C W-3'	PyPyPyPyPy-y-ImHpImHpIm
	657)	5'-W C A C G T W-3'	PyPyPyImHp-y-PyPyImHpIm
	658)	5'-W C A C G A W-3'	PyPyPyImPy-γ-HpPyImHpIm
	659)	5'-W C A C C T W-3'	РуРуРуРуНр-ү-РуІтІтНрІт
	660)	5'-W C A C C A W-3'	PyPyPyPyPy-γ-HpImImHpIm
	661)	5'-W C A C G G W-3'	PyPyPyImIm-γ-PyPyImHpIm
	662)	5'-W C A C G C W-3'	PyPyPyImPy-y-ImPyImHpIm
	663)	5'-W C A C C G W-3'	PyPyPyPyIm-y-PyImImHpIm
	664)	5'-W C A C C C W-3'	PyPyPyPyPy-γ-ImImImHpIm

_			or recognition of 7-bp 5'-WCCWNNW-3'
_		DNA sequence	aromatic amino acid sequence
	665)	5'-W C C T T T W-3'	РуРуНрНрНр-ү-РуРуРуІшіш
5	666)	·5'-W C C T T A W-3'	РуРуНрНрРу-ү-НрРуРуІшІш
	667)	5'-W C C T T G W-3'	РуРуНрНрІш-ү-РуРуРуІшІш
	668)	5'-W C C T T C W-3'	РуРуНрНрРу-ү-ImРуРуImIm
	669)	5'-W C C T A T W-3'	РуРуНрРуНр-ү-РуНрРуІтІт
	670)	5'-W C C T A A W-3'	РуРуНрРуРу-ү-НрНрРуІтіт
10	671)	5'-W C C T A G W-3'	PyPyHpPyIm-y-PyHpPyImIm
	672)	5'-W C C T A C W-3'	PyPyHpPyPy-y-ImHpPyImIm
	673)	5'-W C C T G T W-3'	РуРуНрІmНр-ү-РуРуРуІmІm
	674)	5'-W C C T G A W-3'	PyPyHpImPy-y-HpPyPyImIm
	675)	5'-W C C T G G W-3'	PyPyHpImIm-y-PyPyPyImIm
15	676)	5'-W C C T G C W-3'	PyPyHpImPy-y-ImPyPyImIm
	677)	5'-W C C T C T W-3'	РуРуНрРуНр-ү-РуІтРуІті
	678)	5'-W C C T C A W-3'	PyPyHpPyPy-y-HpImPyImIm
	679)	5'-W C C T C G W-3'	PyPyHpPyIm-y-PyImPyImIm
	680)	5'-W C C T C C W-3'	PyPyHpPyPy-y-ImImPyImIm
20	681)	5'-W C C A T T W-3'	РуРуРуНрНр-ү-РуРуНрІшІш
	682)	5'-W C C A T A W-3'	РуРуРуНрРу-ү-НрРуНрІшІш
	683)	5'-W C C A T G W-3'	РуРуРуНрІт-ү-РуРуНрІтіт
	684)	5'-W C C A T C W-3'	РуРуРуНрРу-ү-ІmРуНрІmІm
	685)	5'-W C C A A T W-3'	РуРуРуРуНр-ү-РуНрНрІmІm
25	686)	5'-W C C A A A W-3'	РуРуРуРуРу-ү-НрНрНрІшІш
	687)	5'-W C C A A G W-3'	PyPyPyPyIm~y-PyHpHpImIm
	688)	5'-W C C A A C W-3'	PyPyPyPyPy-y-ImHpHpImIm
	689)	5'-W C C A G T W-3'	PyPyPyImHp-y-PyPyHpImIm
	690)	5'-W C C A G A W-3'	PyPyPyImPy-y-HpPyHpImIm
30	691)	5'-W C C A G G W-3'	PyPyPyImIm-y-PyPyHpImIm
	692)	5'-W C C A G C W-3'	PyPyPyImPy-y-ImPyHpImIm
	693)	5'-W C C A C T W-3'	РуРуРуРуНр-ү-РуІтНрІтІт
	694)	5'-W C C A C A W-3'	PyPyPyPy-y-HpImHpImIm
	695)	5'-W C C A C G W-3'	PyPyPyPyIm-y-PyImHpImIm
35	696)	5'-W C C A C C W-3'	PyPyPyPy-y-ImImHpImIm

			for recognition of 7-bp 5'-WCCSNNW-3'
-		DNA sequence	aromatic amino acid sequence
	697)	5'-W C C G T T W-3'	PyPyImHpHp-y-PyPyPyImIm
	698)	·5'-W C C G T A W-3'	PyPyImHpPy-y-HpPyPyImIm
	699)	5'-W C C G T G W-3'	PyPyImHpIm-y-PyPyPyImIm
	700)	5'-W C C G T C W-3'	PyPyImHpPy-y-ImPyPyImIm
	701)	5'-W C C G A T W-3'	PyPyImPyHp-y-PyHpPyImIm
	702)	5'-W C C G A A W-3'	PyPyImPyPy-γ-HpHpPyImIm
	703)	5'-W C C G A G W-3'	PyPyImPyIm-y-PyHpPyImIm
	704)	5'-W C C G A C W-3'	PyPyImPyPy-y-ImHpPyImIm
	705)	5'-W C C G G T W-3'	PyPyImImHp-y-PyPyPyImIm
	706)	5'-W C C G G A W-3'	PyPyImImPy-7-HpPyPyImIm
	707)	5'-W C C G C T W-3'	PyPyImPyHp-y-PyImPyImIm
	708)	5'-W C C G C A W-3'	PyPyImPyPy-y-HpImPyImIm
	709)	5'-W C C C T T W-3'	PyPyPyHpHp-γ-PyPyImImIm
	710)	5'-W C C C T A W-3'	РуРуРуНрРу-ү-НрРуImImIm
	711)	5'-W C C C T G W-3'	PyPyPyHpIm-7-PyPyImImIm
	712)	5'-W C C C T C W-3'	PyPyPyHpPy-7-ImPyImImIm
	713)	5'-W C C C A T W-3'	РуРуРуРуНр-ү-РуНрІмІмІм
	714)	5'-W C C C A A W-3'	PyPyPyPyPy-7-HpHpImImIm
	715)	5'-W C C C A G W-3'	PyPyPyPyIm-7-PyHpImImIm
	716)	5'-W C C C A C W-3'	PyPyPyPy-y-ImHpImImIm
	717)	5'-W C C C G T W-3'	PyPyPyImHp-7-PyPyImImIm
	718)	5'-W C C C G A W-3'	PyPyPyImPy-7-HpPyImImIm
	719)	5'-W C C C C T W-3'	· PyPyPyPyHp-y-PyImImImIm
	720)	5'-W C C C C A W-3'	PyPyPyPy-y-HpImImImIm
	G41)	5'-W C C G G G W-3'	PyPyImImIm-y-PyPyPyImIm
	G42)	5'-W C C G G C W-3'	PyPyImImPy-y-ImPyPyImIm
	G43)	5'-W C C G C G W-3'	PyPyImPyIm-y-PyImPyImIm
	G44)	5'-W C C G C C W-3'	PyPyImPyPy-y-ImImPyImIm
	G45)	5'-W C C C G G W-3'	PyPyPyImIm-y-PyPyImImIm
	G46)	5'-W C C C G C W-3'	PyPyPyImPy-γ-ImPyImImIm
	G47)	5'-W C C C C G W-3'	PyPyPyIm-y-PyImImImIm
	G48)	5'-W C C C C C W-3'	PyPyPyPy-y-ImImImImIm

-			s for recognition of 7-bp 5'-WAGWNNW-3'
=		DNA sequence	aromatic amino acid sequence
	721)	5'-W A G T T T W-3'	РуІтНрНрНр-ү-РуРуРуРуНр
5	722)	-5'-W A G T T A W-3'	РуІтНрНрРу-ү-НрРуРуРуНр
	723)	5'-W A G T T G W-3'	РуІтНрНрІт-ү-РуРуРуРуНр
	724)	5'-W A G T T C W-3'	РуІтнрнрРу-ү-ІтРуРуРуНр
	725)	5'-W A G T A T W-3'	РуІмНрРуНр-ү-РуНрРуРуНр
	726)	5'-W A G T A A W-3'	РуІмНрРуРу-ү-НрНрРуРуНр
0	727)	5'-W A G T A G W-3'	РуІmHpРуІm-ү-РуHpРуРуНp
	728)	5'-W A G T A C W-3'	РуІтНрРуРу-ү-ІтНрРуРуНр
	729)	5'-W A G T G T W-3'	РуІтНрІтНр-ү-РуРуРуРуНр
	730)	5'-W A G T G A W-3'	РуІтНрІтРу-ү-НрРуРуРуНр
	731)	5'-W A G T G G W-3'	РуІmHpImIm-ү-РуРуРуРуНр
5	732)	5'-W A G T G C W-3'	РуІтНрІтРу-ү-ІтРуРуРуНр
	733)	5'-W A G T C T W-3'	РуІмНрРуНр-ү-РуІмРуРуНр
	734)	5'-W A G T C A W-3'	РуІмНрРуРу-ү-НрІмРуРуНр
	735)	5'-W A G T C G W-3'	РуІтНрРуІт-ү-РуІтРуРуНр
	736)	5'-W A G T C C W-3'	РуІтНрРуРу-ү-ІтІтРуРуНр
0	737)	5'-W A G A T T W-3'	РуІмРуНрНр-ү-РуРуНрРуНр
	738)	5'-W A G A T A W-3'	РуІтРуНрРу-ү-НрРуНрРуНр
	739)	5'-W A G A T G W-3'	РуІмРуНрІм-ү-РуРуНрРуНр
	740)	5'-W A G A T C W-3'	РуІмРуНрРу-ү-ІмРуНрРуНр
	741)	5'-W A G A A T W-3'	РуІтРуРуНр-ү-РуНрНрРуНр
5	742)	5'-W A G A A A W-3'	РуІтРуРуРу-ү-НрНрРуНр
	743)	5'-W A G A A G W-3'	· РуІmРуРуІm-ү-РуНрНрРуНр
	744)	5'-W A G A A C W-3'	РуІтРуРуРу-ү-ІтНрНрРуНр
	745)	5'-W A G A G T W-3'	РуІтРуІтНр-ү-РуРуНрРуНр
	746)	5'-W A G A G A W-3'	РуІmРуІmРу-ү-НpРуHpРуHp
O	747)	5'-W A G A G G W-3'	PyImPyImIm-y-PyPyHpPyHp
	748)	5'-W A G A G C W-3'	РуІтРуІтРу-ү-ІтРуНрРуНр
	749)	5'-W A G A C T W-3'	РуІтРуРуНр-ү-РуІтНрРуНр
	750)	5'-W A G A C A W-3'	РуІтРуРуРу-ү-НрІтНрРуНр
	751)	5'-W A G A C G W-3'	РуІтРуРуІт-ү-РуІтНрРуНр
5	752)	5'-W A G A C C W-3'	РуІтРуРуРу-ү-ІтІтНрРуНр

_		TABLE 37: 10-ring Hairpin Polyamides DNA sequence	for recognition of 7-bp 5'-WAGSNNW-3'
	553\		aromatic amino acid sequence
	753)	5'-W A G G T T W-3'	РуІшішНрНр-ү-РуРуРуРуНр
	754)	5'-W A G G T A W-3'	РуІтітНрРу-ү-НрРуРуРуНр
	755)	5'-W A G G T G W-3'	РуІтітнріт-ү-РуРуРуРуНр
	756)	5'-W A G G T C W-3'	PyImImHpPy-y-ImPyPyPyHp
	757)	5'-W A G G A T W-3'	РуІшПтРуНр-ү-РуНрРуРуНр
	758)	5'-W A G G A A W-3'	РуІмІмРуРу-ү-НрНрРуРуНр
	759)	5'-W A G G A G W-3'	РуІmImРуІm-ү-РуНрРуРуНр
	760)	5'-W A G G A C W-3'	РуІmІmРуРу-ү-ІmНpРуРуНp
	761)	5'-W A G G G T W-3'	РуІтІтітр-ү-РуРуРуРуРу
	762)	5'-W A G G G A W-3'	РуІшІшБРу-ү-НрРуРуРуНр
	763)	5'-W A G G C T W-3'	РуІтІтРуНр-ү-РуІтРуРуНр
	764)	5'-W A G G C A W-3'	РуІтІтРуРу-ү-НрІтРуРуНр
	765)	5'-W A G C T T W-3'	РуІтРуНрНр-ү-РуРуІтРуНр
	766)	5'-W A G C T A W-3'	РуІтРуНрРу-ү-НрРуІтРуНр
	767)	5'-W A G C T G W-3'	РуІтРуНрІт-ү-РуРуІтРуНр
	768)	5'-W A G C T C W-3'	РуІmРуНрРу-ү-ІmРуІmРуНр
	769)	5'-W A G C A T W-3'	РуІтРуРуНр-ү-РуНрІтРуНр
	770)	5'-W A G C A A W-3'	РуІтРуРуРу-ү-НрНрІтРуНр
	771)	5'-W A G C A G W-3'	РуІтРуРуІт-ү-РуНрІтРуНр
	772)	5'-W A G C A C W-3'	РУІМРУРУРУ-7-ІМНРІМРУНР
	773)	5'-W A G C G T W-3'	РуІтРуІтр-ү-РуРуІтРуНр
	774)	5'-W A G C G A W-3'	PyImPyImPy-γ-HpPyImPyHp
	775)	5'-W A G C C T W-3'	РуІтРуРуНр-ү-РуІтРуНр
	776)	5'-W A G C C A W-3'	РуІмРуРуРу-ү-НрІмІмРуНр
	777)	5'-W A G G G G W-3'	PyImImImIm-y-PyPyPyPyHp
	778)	5'-W A G G G C W-3'	PyImImImPy-y-ImPyPyPyHp
	779)	5'-W A G G C G W-3'	
	780)	5'-W A G G C C W-3'	PyImImPyIm-γ-PyImPyPyHp
	781)	5'-W A G C G G W-3'	РуІтітруРу-ү-ІтітРуРуНр
			PyImPyImIm-y-PyPyImPyHp
	782)	5'-W A G C G C W-3'	PyImPyImPy-y-ImPyImPyHp
	783)	5'-W A G C C G W-3'	PyImPyPyIm-y-PyImImPyHp
	784)	5'-W A G C C C W-3'	PyImPyPyPy-γ-ImImImPyHp

-		TABLE 38: 10-ring Hairpin Polyamides DNA sequence	for recognition of 7-bp 5'-WATWNNW-3'
=	785)	5'-W A T T T T W-3'	
5	786)	5'-W A T T T A W-3'	Рунрнрнрн-ү-Рурурурунр
J	787)		Рунрнрру-у-нррурурунр
		5'-W A T T T G W-3'	Рунрнрнрім-ү-РуРуРуРуНр
	788)	5'-W A T T T C W-3'	Рунрнрнрру-ү-ІмРуРуРунр
	789)	5'-W A T T A T W-3'	РунрнрРунр-ү-РунрРуРунр
	790)	5'-W A T T A A W-3'	РуНрНрРуРу-ү-НрНрРуРуНр
10	791)	5'-W A T T A G W-3'	РуНрНрРуІт-ү-РуНрРуРуНр
	792)	5'-W A T T A C W-3'	РуНрНрРуРу-ү-ІmНрРуРуНр
	793)	5'-W A T T G T W-3'	Рунрнрішнр-ү-РуРуРуРуНр
	794)	5'-W A T T G A W-3'	РунрнрімРу-ү-нрРуРуРунр
	795)	5'-W A T T G G W-3'	РуНрНрІтіт-ү-РуРуРуРуНр
15	796)	5'-W A T T G C W-3'	РуНрНрІмРу-ү-ІмРуРуРуНр
	797)	5'-W A T T C T W-3'	РуНрНрРуНр-ү-РуІmРуРуНр
	798)	5'-W A T T C A W-3'	РуНрНрРуРу-ү-НрІmРуРуНр
	799)	5'-W A T T C G W-3'	РуНрНрРуІт-ү-РуІтРуРуНр
	800)	5'-W A T T C C W-3'	РуНрНрРуРу-ү-ІтІтРуРуНр
20	801)	5'-W A T A T T W-3'	РуНрРуНрНр-ү-РуРуНрРуНр
	802)	5'-W A T A T A W-3'	РунрРунрРу-ү-нрРунрРунр
	803)	5'-W A T A T G W-3'	РуНрРуНрІт-ү-РуРуНрРуНр
	804)	5'-W A T A T C W-3'	РунрРунрРу-ү-ІмРунрРунр
	805)	5'-W A T A A T W-3'	РунрРуРунр-ү-РунрнрРунр
25	806)	5'-W A T A A A W-3'	РунрРуРуРу-ү-нрнрррунр
	807)	5'-W A T A A G W-3'	· РуНрРуРуІm-ү-РуНрНрРуНр
	808)	5'-W A T A A C W-3'	РунрРуРуРу-ү-ІшнрнрРунр
	809)	5'-W A T A G T W-3'	РуНрРуІтнр-ү-РуРуНрРуНр
	810)	5'-W A T A G A W-3'	РуНрРуІтРу-ү-НрРуНрРуНр
30	811)	5'-W A T A G G W-3'	РуНрРуІтІт-ү-РуРуНрРуНр
	812)	5'-W A T A G C W-3'	РуНрРуІмРу-ү-ІмРуНрРуНр
	813)	5'-W A T A C T W-3'	РуНрРуРуНр-ү-РуІтНрРуНр
	814)	5'-W A T A C A W-3'	РуНрРуРуРу-ү-НрІмНрРуНр
	815)	5'-W A T A C G W-3'	РуНрРуРуІт-ү-РуІтНрРуНр
35	816)	5'-W A T A C C W-3'	РуНрРуРуРу-ү-ІмІмНрРуНр

_		TABLE 39: 10-ring Hairpin Polyamides for	
=		DNA sequence	aromatic amino acid sequence
	817)	5'-W A T G T T W-3'	РунрІшНрнр-ү-РуРуРуРуНр
5	818)	·5'-W A T G T A W-3'	РуНрІмНрРу-ү-НрРуРуРуНр
	819)	5'-W A T G T G W-3'	РуНрІтНрІт-ү-РуРуРуРуНр
	820)	5'-W A T G T C W-3'	РунрІмнрРу-ү-ІмРуРуРунр
	821)	5'-W A T G A T W-3'	РуНрІтРуНр-ү-РуНрРуРуНр
	822)	5'-W A T G A A W-3'	РуНрІmРуРу-ү-НрНрРуРуНр
10	823)	5'-W A T G A G W-3'	РуНрІщРуІт-ү-РуНрРуРуНр
	824)	5'-W A T G A C W-3'	РуНрІтРуРу-ү-ІтНрРуРуНр
	825)	5'-W A T G G T W-3'	РунрІтітнр-ү-РуРуРуРуНр
	826)	5'-W A T G G A W-3'	РуНрІmІmРу-ү-НрРуРуРуНр
	827)	5'-W A T G C T W-3'	РуНрІтРУНр-ү-РуІтРУРУНр
15	828)	5'-W A T G C A W-3'	РуНрІmРуРу-ү-НрІmРуРуНр
	829)	5'-W A T G G G W-3'	РуНрІтітт-ү-РуРуРуРуНр
	830)	5'-W A T G G C W-3'	PyHpImImPy-y-ImPyPyPyHp
	831)	5'-W A T G C G W-3'	РуНрІтРуІт-ү-РуІтРуРуНр
	832)	5'-W A T G C C W-3'	РунрітРуРу-ү-ітітРуРуНр
20	833)	5'-W A T C T T W-3'	РунрРунрнр-ү-РуРуІтРунр
	834)	5'-W A T C T A W-3'	РуНрРуНрРу-ү-НрРуІmРуНр
	835)	5'-W A T C T G W-3'	РуНрРуНрІт-ү-РуРуІтРуНр
	836)	5'-W A T C T C W-3'	РуНрРуНрРу-ү-ІmРуІmРуНр
	837)	5'-W A T C A T W-3'	РуНрРуРуНр-ү-РуНрІmРуНр
25	838)	5'-W A T C A A W-3'	РуНрРуРуРу-ү-НрНрІтРуНр
	839)	5'-W A T C A G W-3'	· РуНрРуРуІт-ү-РуНрІтРуНр
	840)	5'-W A T C A C W-3'	РуНрРуРуРу-ү-ІmНрІmРуНр
	841)	5'-W A T C G T W-3'	РуНрРуІтНр-ү-РуРуІтРуНр
	842)	5'-W A T C G A W-3'	РуНрРуІтРу-ү-НрРуІтРуНр
30	843)	5'-W A T C C T W-3'	РуНрРуРуНр-ү-РуІтПтРуНр
	844)	5'-W A T C C A W-3'	РуНрРуРуРу-ү-НрІшПтРуНр
	845)	5'-W A T C G G W-3'	РуНрРуІтІт-ү-РуРуІтРуНр
	846)	5'-W A T C G C W-3'	РуНрРуІтРу-ү-ІтРуІтРуНр
	847)	5'-W A T C C G W-3'	РуНрРуРуІт-ү-РуІтІтРуНр
35	848)	5'-W A T C C C W-3'	РуНрРуРуРу-ү-ІтІтІтРуНр

	DNA sequence	aromatic amino acid sequence
 849)	5'-W A A T T T W-3'	уРунрнрнр-ү-РуРуРунрнр
850)	·5'-W A A T T A W-3'	РуРунрНрРу-ү-нрРуРуНрНр
851)	5'-W A A T T G W-3'	РуРуНрНрІт-ү-РуРуРуНрНр
852)	5'-W A A T T C W-3'	РуРуНрНрРу-ү-ІмРуРуНрНр
853)	5'-W A A T A T W-3'	РуРуНрРуНр - ү - РуНрРуНрНр
854)	5'-W A A T A A W-3'	РуРуНрРуРу-ү-нрНрРуНрНр
855)	5'-W A A T A G W-3'	РуРуНрРуІт-ү-РуНрРуНрНр
856)	5'-W A A T A C W-3'	РуРуНрРуРу-ү-ІмНрРуНрНр
857)	5'-W A A T G T W-3'	РуРуНрІmНр-ү-РуРуРуНрНр
858)	5'-W A A T G A W-3'	РуРуНрІmРу-ү-НрРуРуНрНр
859)	5'-W A A T G G W-3'	РуРуНрІшіш-ү-РуРуРуНрНр
860)	5'-W A A T G C W-3'	РуРуНрІmРу-ү-ІmРуРуНрНр
861)	5'-W A A T C T W-3'	РуРуНрРуНр-ү-РуІтРуНрНр
862)	5'-W A A T C A W-3'	РуРуНрРуРу-ү-НрІmРуНрНр
863)	5'-W A A T C G W-3'	РуРуНрРуіт-ү-РуітРуНрНр
864)	5'-W A A T C C W-3'	РуРуНрРуРу-ү-ІтІтРуНрНр
865)	5'-W A A A T T W-3'	РуРуРуНрНр-ү-РуРуНрНрНр
866)	5'-W A A A T A W-3'	РуРуРуНрРу-ү-НрРуНрНрНр
867)	5'-W A A A T G W-3'	РуРуРуНрІт-ү-РуРуНрНрНр
868)	5'-W A A A T C W-3'	РуРуРуНрРу-ү-ІтРуНрНр
869)	5'-W A A A A T W-3'	РуРуРуРуНр-ү-РуНрНрНрНр
870)	5'-W A A A A A W-3'	РуРуРуРуРу-ү-нрНрНрНр
871)	5'-W A A A A G W-3'	РуРуРуРуІт-ү-РуНрНрНр
872)	5'-W A A A A C W-3'	РуРуРуРуРу-ү-ІмНрНрНрНр
873)	5'-W A A A G T W-3'	РуРуРуІшНр-ү-РуРуНрНрНр
874)	5'-W A A A G A W-3'	РуРуРуІтРу-ү-НрРуНрНр
875)	5'-W A A A G G W-3'	РуРуРуІтіт-ү-РуРуНрНрНр
876)	5'-W A A A G C W-3'	РуРуРуІтРу-ү-ІтРуНрНрНр
877)	5'-W A A A C T W-3'	РуРуРуРуНр-ү-РуІмНрНрНр
878)	5'-W A A A C A W-3'	РуРуРуРуРу-ү-НрІмНрНрНр
879)	5'-W A A A C G W-3'	РуРуРуРуІт-ү-РуІтНрНрНр
880)	5'-W A A A C C W-3'	РуРуРуРуРу-ү-ІтІт

	DNA sequence	s for recognition of 7-bp 5'-WAASNNW-3' aromatic amino acid sequence
881)	5'-W A A G T T W-3'	РуРуІтНрНр-ү-РуРуРуНрНр
882)	·5′-W A A G T A W-3'	РуРуІмНрРу-ү-НрРуРуНрНр
883)	5'-W A A G T G W-3'	РуРуІмНрІм-ү-РуРуРуНрНр
884)	5'-W A A G T C W-3'	РуРуІмНрРу-ү-ІмРуРуНрНр
885)	5'-W A A G A T W-3'	РуРуІмРуНр-ү-РуНрРуНрНр
886)	5'-W A A G A A W-3'	РуРуІмРуРу-ү-НрНрРуНрНр
887)	5'-W A A G A G W-3'	РуРуІмРуІм-ү-РуНрРуНрНр
888)	5'-W A A G A C W-3'	РуРуІтРуРу-ү-ІтНрРуНрНр
889)	5'-W A A G G T W-3'	РуРуІшПтр-ү-РуРуРуНр
890)	5'-W A A G G A W-3'	РуРуІшПРУ-7-НрРуРуНрНр
891)	5'-W A A G C T W-3'	РуРуІмРуНр-ү-РуІмРуНрНр
892)	5'-W A A G C A W-3'	РуРуІтРуРу-ү-НрІтРуНрНр
893)	5'-W A A G G G W-3'	РуРуІтіштт-ү-РуРуРуНрНр
894)	5'-W A A G G C W-3'	PyPyImImPy-γ-ImPyPyHpHp
895)	5'-W A A G C G W-3'	РуРуІтРуІт-ү-РуІтРуНр
896)	5'-W A A G C C W-3'	РуРуІтРуРу-ү-ІтІтРуНр
897)	5'-W A A C T T W-3'	• РуРуРуНрНр-ү-РуРуІтНрНр
898)	5'-W A A C T A W-3'	РуРуРуНрРу-ү-НрРуІтНрНр
899)	5'-W A A C T G W-3'	РуРуРуНрІт-ү-РуРуІтНрНр
900)	5'-W A A C T C W-3'	РуРуРуНрРу-ү-ІmРуІmНрНр
901)	5'-W A A C A T W-3'	РуРуРуРуНр-ү-РуНрІmНрНр
902)	5'-W A A C A A W-3'	РуРуРуРуРу-ү-НрНрІмНрНр
903)	5'-W A A C A G W-3'	·РуРуРуРуІт-ү-РуНрІтНрНр
904)	5'-W A A C A C W-3'	РуРуРуРуРу-ү-ІmНрІmНpНp
905)	5'-W A A C G T W-3'	$PyPyPyImHp-\gamma-PyPyImHpHp$
906)	5'-W A A C G A W-3'	РуРуРуІтРу-ү-НрРуІтНрНр
907)	5'-W A A C C T W-3'	РуРуРуРуНр-ү-РуІтІТ
908)	5'-W A A C C A W-3'	РуРуРуРуРу-ү-НрІтШМНрНр
909)	5'-W A A C G G W-3'	PyPyPyImIm-γ-PyPyImHpHp
910)	5'-W A A C G C W-3'	PyPyPyImPy-γ-ImPyImHpHp
911)	5'-W A A C C G W-3'	PyPyPyPyIm-y-PyImImHpHp
912)	5'-W A A C C C W-3'	PyPyPyPyPy-y-ImImImHpHp

******		TABLE 42: 10-ring Hairpin Polyamides for r	ecognition of 7-bp 5'-WACWNNW-3'
		DNA sequence	aromatic amino acid sequence
	913)	5'-W A C T T T W-3'	РуРуНрНрНр-ү-РуРуРуІшНр
5	914)	'5'-W A C T T A W-3'	РуРуНрНрРу-ү-НрРуРуІшНр
	915)	5'-W A C T T G W-3'	РуРуНрНрІт-ү-РуРуРуІтНр
	916)	5'-W A C T T C W-3'	РуРуНрНрРу-ү-ІшРуРуІшНр
	917)	5'-W A C T A T W-3'	РуРуНрРуНр-ү-РуНрРуІmНр
	918)	5'-W A C T A A W-3'	РуРуНрРуРу-ү-НрНрРуІmНр
10	919)	5'-W A C T A G W-3'	РуРуНрРуІт-ү-РуНрРуІтНр
	920)	5'-W A C T A C W-3'	РуРуНрРуРу-ү-ІmНрРуІmНр
	921)	5'-W A C T G T W-3'	РуРуНрІмНр-ү-РуРуРуІмНр
	922)	5'-W A C T G A W-3'	РуРуНрІмРу-ү-НрРуРуІмНр
	923)	5'-W A C T G G W-3'	PyPyHpImIm-y-PyPyPyImHp
15	924)	5'-W A C T G C W-3'	PyPyHpImPy-y-ImPyPyImHp
	925)	5'-W A C T C T W-3'	PyPyHpPyHp-y-PyImPyImHp
	926)	5'-W A C T C A W-3'	РуРуНрРуРу-ү-НрІтРуІтНр
	927)	5'-W A C T C G W-3'	РуРуНрРуІт-ү-РуІтРуІтНр
	928)	5'-W A C T C C W-3'	РуРуНрРуРу-ү-ImImРуImНp
20	929)	5'-W A C A T T W-3'	РуРуРуНрНр-ү-РуРуНрІмНр
	930)	5'-W A C A T A W-3'	РуРуРуНрРу-ү-НрРуНрІмНр
	931)	5'-W A C A T G W-3'	РуРуРуНрІт-ү-РуРуНрІт
	932)	5'-W A C A T C W-3'	РуРуРуНрРу-ү-ІmРуНрІmНр
	933)	5'-W A C A A T W-3'	РуРуРуРуНр-ү-РуНрНрІтНр
25	934)	5'-W A C A A A W-3'	РуРуРуРуРу-ү-НрНрНрІшНр
	935)	5'-W A C A A G W-3'	РуРуРуРуІш-ү-РуНрНрІшНр
	936)	5'-W A C A A C W-3'	РуРуРуРу-ү-ІmНрНрІmНр
	937)	5'-W A C A G T W-3'	РуРуРуІмНр-ү-РуРуНрІмНр
	938)	5'-W A C A G A W-3'	РуРуРуІтРу-ү-НрРуНрІтНр
30	939)	5'-W A C A G G W-3'	PyPyPyImIm-y-PyPyHpImHp
	940)	5'-W A C A G C W-3'	PyPyPyImPy-y-ImPyHpImHp
	941)	5'-W A C A C T W-3'	РуРуРуРуНр-ү-РуІмНрІмНр
	942)	5'-W A C A C A W-3'	PyPyPyPyPy-7-HpImHpImHp
	943)	5'-W A C A C G W-3'	PyPyPyIm-y-PyImHpImHp
35	944)	5'-W A C A C C W-3'	PyPyPyPy-y-ImImHpImHp

-		DNA sequence	s for recognition of 7-bp 5'-WACSNNW-3'	
=			aromatic amino acid sequence	
	945)	5'-W A C G T T W-3'	РуРуІмНрНр-ү-РуРуРуІмНр	
	946)	·5'-W A C G T A W-3'	РуРуІтнрРу-ү-НрРуРуІтнр	
	947)	5'-W A C G T G W-3'	РуРуІмНрІм-ү-РуРуРуІмНр	
	948)	5'-W A C G T C W-3'	PyPyImHpPy-y-ImPyPyImHp	
	949)	5'-W A C G A T W-3'	$PyPyImPyHp-\gamma-PyHpPyImHp$	
	950)	5'-W A C G A A W-3'	РуРуІmРуРу-ү-НрНрРуІmНр	
	951)	5'-W A C G A G W-3'	РуРуІтРуІт-ү-РуНрРуІтНр	
	952)	5'-W A C G A C W-3'	РуРуІтРуРу-ү-ІтНрРуІтНр	
	953)	5'-W A C G G T W-3'	РуРуІшІшНр-ү-РуРуРуІшНр	
	954)	5'-W A C G G A W-3'	РуРуІшІшРу-ү-НрРуРуІшНр	
	955)	5'-W A C G C T W-3'	РуРуІмРуНр-ү-РуІмРуІмНр	
	956)	5'-W A C G C A W-3'	PyPyImPyPy-y-HpImPyImHp	
	957)	5'-W A C C T T W-3'	РуРуРуНрНр-ү-РуРуІтІт	
	958)	5'-W A C C T A W-3'	РуРуРуНрРу-ү-НрРуІтІт	
	959)	5'-W A C C T G W-3'	РуРуРуНрІт-ү-РуРуІтІт	
	960)	5'-W A C C T C W-3'	РуРуРуНрРу-ү-ImРуImImНp	
	961)	5'-W A C C A T W-3'	РуРуРуРуНр-ү-РуНрІтІТНр	
	962)	5'-W A C C A A W-3'	^{РуР} уРуРуРу-ү-НрНр1mImHp	
	963)	5'-W A C C A G W-3'	PyPyPyPyIm-y-PyHpImImHp	
	964)	5'-W A C C A C W-3'	РуРуРуРуРу-ү-ІмНрІмІмНр	
	965)	5'-W A C C G T W-3'	PyPyPyImHp-γ-PyPyImImHp	
	966)	5'-W A C C G A W-3'	PyPyPyImPy-γ-HpPyImImHp	
	967)	5'-W A C C C T W-3'	· РуРуРуРуНр-ү-РуІмІмІмНр	
	968)	5'-W A C C C A W-3'	РуРуРуРуРу-ү-НрІшІшІшНр	
	969)	5'-W A C G G G W-3'	PyPyImImIm-y-PyPyPyImHp	
	970)	5'-W A C G G C W-3'	PyPyImImPy-γ-ImPyPyImHp	
	971)	5'-W A C G C G W-3'	PyPyImPyIm-y-PyImPyImHp	
	972)	5'-W A C G C C W-3'	PyPyImPyPy-γ-ImImPyImHp	
	973)	5'-W A C C G G W-3'	PyPyPyImIm-y-PyPyImImHp	
	974)	5'-W A C C G C W-3'	PyPyPyImPy-y-ImPyImImHp	
	975)	5'-W A C C C G W-3'	PyPyPyPyIm-y-PyImImImHp	
	976)	5'-W A C C C C W-3'	PyPyPyPyPy-γ-ImImImImHp	

			recognition of 7-bp 5'-WTGWNNW-3'
		DNA sequence	aromatic amino acid sequence
	977)	5'-W T G T T T W-3'	НрІмНрНрНр-ү-РуРуРуРуРу
5	978)	.5'-W T G T T A W-3'	НрІмНрНрРу-ү-НрРуРуРуРу
	979)	5'-W T G T T G W-3'	НрІшНрНрІш-ү-БУБУБУБУБУ
	980)	5'-W T G T T C W-3'	НрІшНрНрРу-ү-ІшРуРуРуРу
	981)	5'-W T G T A T W-3'	НрІшНрРуНр-ү-РуНрРуРуРу
	982)	5'-W T G T A A W-3'	НрІмНрРуРу-ү-НрНрРуРуРу
10	983)	5'-W T G T A G W-3'	НрІтНрРуІт-ү-РуНрРуРуРу
	984)	5'-W T G T A C W-3'	НрІmНpРуРу-ү-ІmНpРуРуРу
	985)	5'-W T G T G T W-3'	НрІмНрІмНр-ү-РуРуРуРуРу
	986)	5'-W T G T G A W-3'	НрІmНрІmРу-ү-НрРуРуРуРу
	987)	5'-W T G T G G W-3'	НрІmНрІmІm-ү-РуРуРуРуРу
15	988)	5'-W T G T G C W-3'	НрІмНрІмРу-ү-ІмРуРуРуРу
	989)	5'-W T G T C T W-3'	НрІmНpРyНp-ү-РуImРyРyРy
	990)	5'-W T G T C A W-3'	НрІмНрРуРу-ү-НрІмРуРуРу
	991)	5'-W T G T C G W-3'	НрІмНрРуІм-ү-РуІмРуРуРу
	992)	5'-W T G T C C W-3'	НрІ мНрРуРу-ү-ІмІмРуРуРу
20	993).	5'-W T G A T T W-3'	НрІmРуНрНр-ү-РуРуНрРуРу
	994)	5'W T G A T A W-3'	НрІшБуНрРу-ү-НрРуНрРуРу
	995)	5'-W T G A T G W-3'	НрІтРуНрІт-ү-РуРуНрРуРу
	996)	5'-W T G A T C W-3'	НрІшРуНрРу-ү-ІшРуНрРуРу
	997)	5'-W T G A A T W-3'	НрІmРуРуНр-ү-РуНрНрРуРу
25	998)	5'-W T G A A A W-3'	НрІmРуРуРу-ү-НрНрНрРуРу
	999)	5'-W T G A A G W-3'	НрІmРуРуІm-ү-РуНрНрРуРу
	1000)	5'-W T G A A C W-3'	НрІтРуруру-ү-ІтНрНрРуру
	1001)	5'-W T G A G T W-3'	НрІmРуІmНр-ү-РуРуНрРуРу
	1002)	5'-W T G A G A W-3'	НрІмРуІмРу-ү-НрРуНрРуРу
30	1003)	5'-W T G A G G W-3'	HpImPyImIm-γ-PyPyHpPyPy
	1004)	5'-W T G A G C W-3'	HpImPyImPy-γ-ImPyHpPyPy
	1005)	5'-W T G A C T W-3'	НрІмРуРуНр-ү-РуІмНрРуРу
	1006)	5'-W T G A C A W-3'	НрІмРуРуРу-ү-НрІмНрРуРу
	1007)	5'-W T G A C G W-3'	HpImPyPyIm-γ-PyImHpPyPy
35	1008)	5'-W T G A C C W-3'	HpImPyPyPy-γ-ImImHpPyPy

		TABLE 45: 10-ring Hairpin Polyamides for	recognition of 7-bp 5'-WTGSNNW-3'
		DNA sequence	aromatic amino acid sequence
	1009)	5'-W T G G T T W-3'	НрІшІШНрНр-ү-РуРуРуРуРу
5	1010)	5'-W T G G T A W-3'	НрІмІмНрРу-ү-НрРуРуРуРу
	1011)	5'-W T G G T G W-3'	НрІшІШНрІш-ү-БАБАБАБАБ
	1012)	5'-W T G G T C W-3'	НрІшІШНрРу-ү-ІшРуРуРуРу
	1013)	5'-W T G G A T W-3'	НрІшІшБунр-ү-РунрРуРуРу
	1014)	5'-W T G G A A W-3'	НрІтІтРуРу-ү-НрНрРуРуРу
10	1015)	5'-W T G G A G W-3'	НрІшІшБуІш-ү-БуНрБуБуБу
	1016)	5'-W T G G A C W-3'	НрІшІшБуРу-ү-ІшНрРуРуРу
	1017)	5'-W T G G G T W-3'	Нрішішішнр-ү-РуРуРуРуРу
	1018)	5'-W T G G G A W-3'	НрІтІшТтРу-ү-НрРуРуРуРу
	1019)	5'-W T G G C T W-3'	НрІшІшБАНЬ-4-БАІшБАБА
15	1020)	5'-W T G G C A W-3'	НрІтПтРуРу-ү-НрІтРуРуРу
	1021)	5'-W T G C T T W-3'	НрІтРуНрНр-ү-РуРуІтРуРу
	1022)	5'-W T G C T A W-3'	НрІмРуНрРу-ү-НрРуІмРуРу
	1023)	5'-W T G C T G W-3'	HpImPyHpIm-y-PyPyImPyPy
	1024)	5'-W T G C T C W-3'	НрІтРуНрРу-ү-ІтРуІтРуРу
20	1025)	5'-W T G C A T W-3'	НрІтРуРуНр-ү-РуНрІтРуРу
	1026)	5'-W T G C A A W-3'	НрІmРуРуРу-ү-НрНрІmРуРу
	1027)	5'-W T G C A G W-3'	HpImPyPyIm-y-PyHpImPyPy
	1028)	5'-W T G C A C W-3'	НрІmРуРуРу-ү-ІmНрІmРуРу
	1029)	5'-W T G C G T W-3'	НрІmРуІmНр-ү-РуРуІmРуРу
25	1030)	5'-W T G C G A W-3'	HpImPyImPy-ү-HpPyImPyPy
	1031)	5'-W T G C C T W-3'	[.] НрІmРуРуНр-ү-РуІmІmРуРу
	1032)	5'-W T G C C A W-3'	НрІтРуРуРу-ү-НрІтІтРуРу
	1033)	5'-W T G G G G W-3'	HpImImIm-y-PyPyPyPyPy
	1034)	5'-W T G G G C W-3'	HpImImImPy-y-ImPyPyPyPy
30	1035)	5'-W T G G C G W-3'	HpImImPyIm-y-PyImPyPyPy
	1036)	5'-W T G G C C W-3'	HpImImPyPy-y-ImImPyPyPy
	1037)	5'-W T G C G G W-3'	HpImPyImIm-y-PyPyImPyPy
	1038)	5'-W T G C G C W-3'	HpImPyImPy-7-ImPyImPyPy
	1039)	5'-W T G C C G W-3'	HpImPyPyIm-7-PyImImPyPy
35	1040)	5'-W T G C C C W-3'	НрІмРуРуРу-ү-ІмІмІмРуРу

	DNA sequence	for recognition of 7-bp 5'-WTTWNNW-3' - aromatic amino acid sequence
1041		НрНрНрНрНр-ү-РуРуРуРу
1042	·5'-W T T T A W-3'	нрнрнрру-у-нрруруруру
1043	5'-W T T T G W-3'	НрНрНрІт-ү-РуРуРуРу
1044	5'-W T T T T C W-3'	НрНрНрРу-ү-ІмРуРуРуРу
1045	5'-W T T T A T W-3'	НрНрНрРуНр-ү-РуНрРуРуРу
1046	5'-W T T T A A W-3'	нрнррруру-ү-нрнрруруру
1047	5'-W T T A G W-3'	НрНрРруІт-ү-РуНрРуРуРу
1048	5'-W T T A C W-3'	НрНрРуРу-ү-ІмНрРуРуРу
1049	5'-W T T G T W-3'	НрНрНрІшНр-ү-РуРуРуРуРу
1050	5'-W T T G A W-3'	НрНрНрІmРу-ү-НрРуРуРуРу
1051	5'-W T T G G W-3'	НрНрНрІmІm-ү-РуРуРуРуРу
1052	5'-W T T G C W-3'	НрНрНрІмРу-ү-ІмРуРуРуРу
1053	5'-W T T T C T W-3'	НрНрНрРуНр-ү-РуІ m РуРуРу
1054	5'-W T T T C A W-3'	НрНрНрРуРу-ү-Нр І mРуРуРу
1055	5'-W T T C G W-3'	НрНрНрРуІт-ү-РуІтРуРуРу
1056	5'-W T T C C W-3'	НрНрРрРуРу-ү-ImImРуРуРу
1057) 5'-W T T A T T W-3'	нрнрРунрнр-ү-РуРунрРуРу
1058) 5'-W T T A T A W-3'	НрНрРуНрРу-ү-НрРуНрРуРу
1059) 5'-W T T A T G W-3'	НрНрРуНрІт-ү-РуРуНрРуРу
1060	5'-W T T A T C W-3'	НрНрРуНрРу-ү-ІмРуНрРуРу
1061) 5'-W T T A A T W-3'	НрНрРуРуНр-ү-РуНрНрРуРу
1062) 5'-W T T A A A W-3'	НрНрРуРуРу-ү-НрНрРуРу
1063) 5'-W T T A A G W-3'	НрНрРуРуІт-ү-РуНрНрРуРу
1064) 5'-W T T A A C W-3'	НрНрРуРуРу-ү-ІмНрНрРуРу
1065) 5'-W T T A G T W-3'	НрНрРуІмНр-ү-РуРуНрРуРу
1066) 5'-W T T A G A W-3'	НрНрРуІмРу-ү-НрРуНрРуРу
1067) 5'-W T T A G G W-3'	НрНрРуІшІш-ү-РуРуНрРуРу
1068) 5'-W T T A G C W-3'	НрНрРуІмРу-γ-ІмРуНрРуРу
1069) 5'-W T T A C T W-3'	НрНрРуРуНр-ү-РуІмНрРуРу
1070) 5'-W T T A C A W-3'	НрНрРуРуРу-ү-НрІтНрРуРу
1071) 5'-W T T A C G W-3'	НрНрРуРуІт-ү-РуІтНрРуРу
1072) 5'-W T T A C C W-3'	НрНрРуРуРу-ү-ІтІт

	TABLE 47: 10-ring Hairpin Polyamides DNA sequence	aromatic amino acid sequence	
1073) 5'-W T T G T T W-3'	НрНрІмНрНр-ү-РуРуРуРуРу	
1074) ·5'-W T T G T A W-3'	НрНрІмНрРу-ү-НрРуРуРуРу	
1075) 5'-W T T G T G W-3'	НрНрІтНрІт-ү-РуРуРуРуРу	
1076) 5'-W T T G T C W-3'	НрНрІшНрРу-ү-ІшРуРуРуРу	
1077) 5'-W T T G A T W-3'	НрНрІшРуНр-ү-РуНрРуРуРу	
1078) 5'-W T T G A A W-3'	НрНрІшБУБУ-7-НрНрБУБУБУ	
1079) 5'-W T T G A G W-3'	НрНрІтРуІт-ү-РуНрРуРуРу	
1080) 5'-W T T G A C W-3'	НрНрІmРуРу- ү -ІmНpРуРуРу	
1081) 5'-W T T G G T W-3'	НрНрІтПтнр-ү-РуРуРуРуРу	
1082) 5'-W T T G G A W-3'	НрНрІmІmРу-γ-НрРуРуРу Ру	
1083) 5'-W T T G C T W-3'	НрНрІтРуНр-ү-РуІтРуРуРу	
1084) 5'-W T T G C A W-3'	НрНрІшРуРу-ү-НрІшРуРуРу	
1085) 5'-W T T G G G W-3'	НрНрІтітіт-ү-РуРуРуРуРу	
1086) 5'-W T T G G C W-3'	НрНрІтІтРу-ү-ІтРуРуРуРу	
1087) 5'-W T T G C G W-3'	НрНрІmРуІm-γ-РуІmРуРуРу	
1088) 5'-W T T G C C W-3'	НрНрІтРуРу-ү-ІтІтРуРуРу	
1089) 5'-W T T C T T W-3'.	НрНрРуНрНр-ү-РуРуІтРуРу	
1090) 5'-W T T C T A W-3'	НрНрРуНрРу-ү-НрРуІтРуРу	
1091) 5'-W T T C T G W-3'	НрНрРуНрІm-γ-РуРуІmРуРу	
1092) 5'-W T T C T C W-3'	НрНрРуНрРу-ү-ІmРуІmРуРу	
1093) 5'-W T T C A T W-3'	НрНрРуРуНр-ү-РуНрІmРуРу	
1094) 5'-W T T C A A W-3'	НрНрРуРуРу-ү-НрНрІшРуРу	
1095) 5'-W T T C A G W-3'	· НрНрРуРуІм-ү-РуНрІmРуРу	
1096) 5'-W T T C A C W-3'	НрНрРуРуРу-ү-ІмНрІмРуРу	
1097) 5'-W T T C G T W-3'	НрНрРуІтНр-ү-РуРуІтРуРу	
1098) 5'-W T T C G A W-3'	НрНрРуІтРу-ү-НрРуІтРуРу	
1099) 5'-W T T C C T W-3'	НрНрРуРуНр-ү-РуІтІпРуРу	
1100) 5'-W T T C C A W-3'	НрНрРуРуРу-ү-НрІтІтРуРу	
1101) 5'-W T T C G G W-3'	HpHpPyImIm-γ-PyPyImPyPy	
1102) 5'-W T T C G C W-3'	HpHpPyImPy-y-ImPyImPyPy	
1103) 5'-W T T C C G W-3'	НрНрРуРуІт-ү-РуІтІтРуРу	
1104) 5'-W T T C C C W-3'	НрНрРуРуРу-ү-ІтІттруРу	
		· · · · · · · · · · · · · · · · · · ·	

=		DNA sequence	for recognition of 7-bp 5'-WTAWNNW-3' aromatic amino acid sequence		
_	1105)	5'-W T A T T T W-3'	НрРуНрНрНр-γ-РуРуРуНрР у		
5	1106)	'5'-W T A T T A W-3'	нрРунрнрРу-ү-нрРуРунрРу		
	1107)	5'-W T A T T G W-3'	НpРyHpHpIm-γ-РyРyРyНpРy		
	1108)	5'-W T A T T C W-3'	НрРуНрНрРу-ү-ІmРуРуНрРу		
	1109)	5'-W T A T A T W-3'	НрРуНрРуНр-ү-РуНрРуНрРу		
	1110)	5'-W T A T A A W-3'	НрРуНрРуРу-ү-НрНрРуНрРу		
)	1111)	5'-W T A T A G W-3'	НpРyHpРyIm-γ-РyHpРyHpРy		
	1112)	5'-W T A T A C W-3'	НрРуНрРуРу-ү-ІшНрРуНрРу		
	1113)	5'-W T A T G T W-3'	HpРуHpІmHp-γ-РуРуРуНpРу		
	1114)	5'-W T A T G A W-3'	HpРуHpІmРу-γ-HpРуРуНpРу		
	1115)	5'-W T A T G G W-3'	НрРуНрІ mІm-γ-РуРуРуНрРу		
5	1116)	5'-W T A T G C W-3'	НрРуНрІmРу-γ-ІmРуРуНрР у		
	1117)	5'-W T A T C T W-3'	НpРyНpРyНp-γ-РyImРyНpРy		
	1118)	5'-W T A T C A W-3'	НрРуНрРуРу-γ-НрІmРуНрРу		
	1119)	5'-W T A T C G W-3'	Н рРуНрРуІm-γ-РуІmРуНр Ру		
	1120)	5'-W T A T C C W-3'	НрРунрРуРу-ү-ІтІтРунрРу		
)	1121)	5'-W T A A T T W-3'	нрРуРунрнр-ү-РуРунрнрРу		
	1122)	5'-W T A A T A W-3'	НрРуРуНрРу-ү-НрРуНрНрРу		
	1123)	5'-W T A A T G W-3'	НрРуРуНрІm-ү-РуРуНрНрРу		
	1124)	5'-W T A A T C W-3'	НpРyРyНpРy-ү-ImРyНpНpРy		
	1125)	5'-W T A A A T W-3'	НрРуРуРуНр-ү-РуНрНрНрРу		
5	1126)	5'-W T A A A A W-3'	нргугуругу-ү-нрнрнргру		
	1127)	5'-W T A A A G W-3'	НрРуРуРуІт-ү-РуНрНрРр		
	1128)	5'-W T A A A C W-3'	НрРуРуРуРу-ү-ІмНрНрНрРу		
	1129)	5'-W T A A G T W-3'	НрРуРуІмНр-ү-РуРуНрНрРу		
	1130)	5'-W T A A G A W-3'	НpРyРyImРy-ү-НpРyНpНpРy		
)	1131)	5'-W T A A G G W-3'	НpРyРyImIm-ү-РуРуНpНpРy		
	1132)	5'-W T A A G C W-3'	НpРyРyІmРy-γ-ІmРyНpНpРy		
	1133)	5'-W T A A C T W-3'	НрРуРуРуНр-ү-РуІтНрНрРу		
	1134)	5'-W T A A C A W-3'	НрРуРуРуРу-ү-НрІмНрНрРу		
	1135)	5'-W T A A C G W-3'	НрРуРуРуІт-ү-РуІтНрНрРу		
5	1136)	5'-W T A A C C W-3'	НрРуРуРуРу-ү-ІтІтНрНрРу		

			or recognition of 7-bp 5'-WTASNNW-3'
-		DNA sequence	aromatic amino acid sequence
	1137)	5'-W T A G T T W-3'	НрРуІмНрНр-ү-РуРуРуНрРу
	1138)	·5'-W T A G T A W-3'	НрРуІтНрРу-ү-НрРуРуНрРу
	1139)	5'-W T A G T G W-3'	НрРуІтНрІт-ү-РуРуРуНрРу
	1140)	5'-W T A G T C W-3'	НрРуІмНрРу-ү-ІмРуРуНрРу
	1141)	5'-W T A G A T W-3'	НрРуІмРуНр-ү-РуНрРуНрРу
	1142)	5'-W T A G A A W-3'	НpРyІmРyРy-ү-НpНpРyНpРy
	1143)	5'-W T A G A G W-3'	НpРyІmРyІm-ү-РуНpРyНpРy
	1144)	5'-W T A G A C W-3'	НpРуІmРуРу-ү-ІmНpРуНpРу
	1145)	5'-W T A G G T W-3'	НрРуІтітнр-ү-РуРуРуНрРу
	1146)	5'-W T A G G A W-3'	НрРуІтітРу-ү-НрРуРуНрРу
	1147)	5'-W T A G C T W-3'	НрРуІ mР уНр-ү-РуІmРуНрРу
	1148)	5'-W T A G C A W-3'	НрРуІмРуРу-ү-НрІмРуНрРу
	1149)	5'-W T A G G G W-3'	HpPyImImIm-y-PyPyPyHpPy
	1150)	5'-W T A G G C W-3'	HpPyImImPy-7-ImPyPyHpPy
	1151)	5'-W T A G C G W-3'	HpPyImPyIm-γ-PyImPyHpPy
	1152)	5'-W T A G C C W-3'	НрРуІmРуРу-ү-ІmІmРуНрРу
	1153)	5'-W T A C T T W-3'	НрРуРуНрНр-ү-РуРуІмНрРу
	1154)	5'-W T A C T A W-3'	НрРуРуНрРу-ү-НрРуІмНрРу
	1155)	5'-W T A C T G W-3'	НрРуРуНрІм-ү-РуРуІмНрРу
	1156)	5'-W T A C T C W-3'	НрРуРуНрРу-γ-ImРуImНpРу
	1157)	5'-W T A C A T W-3'	НрРуРуРуНр-ү-РуНрІmНpРy
	1158)	5'-W T A C A A W-3'	НрРуРуРуРу-ү-НрНрІмНрРу
	1159)	5'-W T A C A G W-3'	НрРуРуРуІт-ү-РуНрІт
	1160)	5'-W T A C A C W-3'	НрРуРуРуРу-ү-ІмНрІмНрРу
	1161)	5'-W T A C G T W-3'	${ t HpPyPyImHp-\gamma-PyPyImHpPy}$
	1162)	5'-W T A C G A W-3'	НрРуРуІмРу-ү-НрРуІмНрРу
	1163)	5'-W T A C C T W-3'	НрРуРуРуНр-ү-РуІмІмНрРу
	1164)	5'-W T A C C A W-3'	Н рРуРуРуРу-ү-НрІmІmНpРу
	1165)	5'-W T A C G G W-3'	HpPyPyImIm-y-PyPyImHpPy
	1166)	5'-W T A C G C W-3'	HpPyPyImPy-y-ImPyImHpPy
	1167)	5'-W T A C C G W-3'	HpPyPyPyIm-y-PyImImHpPy
	1168)	5'-W T A C C C W-3'	НрРуРуРуРу-ү-ІтІпІтНрРу

	,	TABLE 50: 10-ring Hairpin Polyamides for	recognition of 7-bp 5'-WTCWNNW-3'
		DNA sequence	aromatic amino acid sequence
	1169)	5'-W T C T T T W-3'	НрРуНрНр-ү-РуРуРуІтРу
5	1170)	5'-W T C T T A W-3'	НрРуНрНрРу-ү-НрРуРуІmРу
	1171)	5'-W T C T T G W-3'	НрРуНрНрІт-ү-РуРуРуІтРу
	1172)	5'-W T C T T C W-3'	НрРуНрНрРу-ү-ІmРуРуІmРу
	1173)	5'-W T C T A T W-3'	НрРуНрРуНр-ү-РуНрРуІмРу
	1174)	5'-W T C T A A W-3'	НрРуНрРуРу-γ-HpHpРуImРу
10	1175)	5'-W T C T A G W-3'	НрРуНрРуІш-ү-РуНрРуІшРу
	1176)	5'-W T C T A C W-3'	НрРуНрРуРу-ү-ІмНрРуІмРу
	1177)	5'-W T C T G T W-3'	НрРуНрІmНр-ү-РуРуРуІmРу
	1178)	5'-W T C T G A W-3'	HpРуHpImРy-ү-HpРуРуImРу
	1179)	5'-W T C T G G W-3'	HpPyHpImIm-y-PyPyPyImPy
15	1180)	5'-W T C T G C W-3'	HpPyHpImPy-y-ImPyPyImPy
	1181)	5'-W T C T C T W-3'	НрРуНрРуНр-ү-РуІтРуІтРу
	1182)	5'-W T C T C A W-3'	НрРуНрРуРу-ү-НрІтРуІтРу
	1183)	5'-W T C T C G W-3'	HpPyHpPyIm-γ-PyImPyImPy
	1184)	5'-W T C T C C W-3'	НрРуНрРуРу-ү-ІтІтРуІтРу
20	1185).	5'-W T C A T T W-3'	НрРуРуНрНр-ү-РуРуНрІmРу
	1186)	5'-W T C A T A W-3'	НрРуРуНрРу-ү-НрРуНрІмРу
	1187)	5'-W T C A T G W-3'	НрРуРуНрІш-ү-РуРуНрІшРу
	1188)	5'-W T C A T C W-3'	НрРуРуНрРу-ү-ІтРуНрІтРу
	1189)	5'-W T C A A T W-3'	НрРуРуРуНр-ү-РуНрНрІmРу
25	1190)	5'-W T C A A A W-3'	НрРуРуРу-ү-НрНрНрІmРу
	1191)	5'-W T C A A G W-3'	НрРуРуРуІт-ү-РуНрНрІтРу
	1192)	5'-W T C A A C W-3'	НрРуРуРуРу-ү-ІmНрНрІmРу
	1193)	5'-W T C A G T W-3'	НрРуРуІмНр-ү-РуРуНрІмРу
	1194)	5'-W T C A G A W-3'	НрРуРуІтРу-ү-НрРуНрІтРу
30	1195)	5'-W T C A G G W-3'	HpPyPyImIm-y-PyPyHpImPy
	1196)	5'-W T C A G C W-3'	HpPyPyImPy-γ-ImPyHpImPy
	1197)	5'-W T C A C T W-3'	НрРуРуРуНр-ү-РуІтНрІтРу
	1198)	5'-W T C A C A W-3'	НрРуРуРу-ү-НрІтНрІтРу
	1199)	5'-W T C A C G W-3'	HpPyPyPyIm-y-PyImHpImPy
35	1200)	5'-W T C A C C W-3'	HpPyPyPy-y-ImImHpImPy

_		DNA sequence	aromatic amino acid sequence
_	1201)	5'-W T C G T T W-3'	НрРуІтНрНр-ү-РуРуРуІтРу
	1202)	·5'-W T C G T A W-3'	НрРуІшНрРу-ү-НрРуРуІшРу
	1203)	5'-W T C G T G W-3'	НрРуІшНрІш-ү-РуРуРуІшРу
	1204)	5'-W T C G T C W-3'	НрРуІтНрРу-ү-ІтРуРуІтРу
	1205)	5'-W T C G A T W-3'	НрРуІтРуНр-ү-РуНрРуІтРу
	1206)	5'-W T C G A A W-3'	HpPyImPyPy-7-HpHpPyImPy
	1207)	5'-W T C G A G W-3'	HpPyImPyIm-y-PyHpPyImPy
	1208)	5'-W T C G A C W-3'	HpPyImPyPy-7-ImHpPyImPy
	1209)	5'-W T C G G T W-3'	HpPyImImHp-7-PyPyPyImPy
	1210)	5'-W T C G G A W-3'	HpPyImImPy~7-HpPyPyImPy
	1211)	5'-W T C G C T W-3'	HpPyImPyHp-y-PyImPyImPy
	1212)	5'-W T C G C A W-3'	HpPyImPyPy-7-HpImPyImPy
	1213)	5'-W T C C T T W-3'	НрРуРуНрНр-ү-РуРуІmІmРу
	1214)	5'-W T C C T A W-3'	НрРуРуНрРу-ү-НрРуІтІМРу
	1215)	5'-W T C C T G W-3'	НрРуРуНрІм-ү-РуРуІмІмРу
	1216)	5'-W T C C T C W-3'	НрРуРуНрРу-ү-ІmРуІmІmРу
	1217)	5'-W T C C A T W-3'	НрРуРуРуНр-ү-РуНрІтПРу
	1218)	5'-W T C C A A W-3'	HpРуРуРуРу-ү-HpHpImImРу
	1219)	5'-W T C C A G W-3'	НрРуРуРуIm-ү-РуНрImImРу
	1220)	5'-W T C C A C W-3'	НрРуРуРуРу-ү-ImНpImImРу
	1221)	5'-W T C C G T W-3'	HpPyPyImHp-y-PyPyImImPy
	1222)	5'-W T C C G A W-3'	HpPyPyImPy-7-HpPyImImPy
	1223)	5'-W T C C C T W-3'	· HpPyPyPyHp-γ-PyImImImPy
	1224)	5'-W T C C C A W-3'	НрРуРуРуРу-ү-НрImImImРу
	1225)	5'-W T C G G G W-3'	HpPyImImIm-y-PyPyPyImPy
	1226)	5'-W T C G G C W-3'	HpPyImImPy-γ-ImPyPyImPy
	1227)	5'-W T C G C G W-3'	HpPyImPyIm-y-PyImPyImPy
	1228)	5'-W T C G C C W-3'	HpPyImPyPy-γ-ImImPyImPy
	1229)	5'-W T C C G G W-3'	HpPyPyImIm-y-PyPyImImPy
	1230)	5'-W T C C G C W-3'	HpPyPyImPy-γ-ImPyImImPy
	1231)	5'-W T C C C G W-3'	HpPyPyPyIm-y-PyImImImPy
	1232)	5'-W T C C C C W-3'	HpPyPyPyPy-y-ImImImImPy

_	TABLE 52	: 10-ring Hairpin Polyamides for recognit DNA sequence	ion of 7-bp 5'-WGGWNNW-3' with β substitutions.
		DIVA sequence	aromatic amino acid sequence
	243β)	5'-W G G T T G W-3'	${\tt ImIm-}\beta{\tt -HpIm-}\gamma{\tt -PyPyPyPyPy}$
	243βp)	'5'-W G G T T G W-3'	${\tt ImIm-\beta-HpIm-\gamma-PyPy-\beta-PyPy}$
	247β)	5'-W G G T A G W-3'	${\tt ImIm-\beta-PyIm-\gamma-PyHpPyPyPy}$
	247βp)	5'-W G G T A G W-3'	ÏmIm-β-РуІm-γ-РуНр-β-РуРу
	249β)	5'-W G G T G T W-3'	${\tt ImIm-\beta-ImHp-\gamma-PyPyPyPyPy}$
	249βp)	5'-W G G T G T W-3'	${\tt ImIm-\beta-ImHp-\gamma-PyPy-\beta-PyPy}$
	250 β)	5'-W G G T G A W-3'	${\tt ImIm-\beta-ImPy-\gamma-HpPyPyPyPy}$
	250βp)	5'-W G G T G A W-3'	${\tt ImIm-\beta-ImPy-\gamma-HpPy-\beta-PyPy}$
	251β)	5'-W G G T G G W-3'	${\tt ImIm-}\beta\hbox{-}{\tt ImIm-}\gamma\hbox{-}{\tt PyPyPyPyPy}$
	251βp)	5'-W G G T G G W-3'	${\tt ImIm-eta-ImIm-\gamma-PyPy-eta-PyPy}$
	252β)	5'-W G G T G C W-3'	ImIm-β-ImPy-γ-ImPyPyPyPy
	252βp)	5'-W G G T G C W-3'	$ImIm-\beta-ImPy-\gamma-ImPy-\beta-PyPy$
	255β)	5'-W G G T C G W-3'	ImIm-β-PyIm-γ-PyImPyPyPy
	255βp)	5'-W G G T C G W-3'	${\tt ImIm-\beta-PyIm-\gamma-PyIm-\beta-PyPy}$
	259β)	5'-W G G A T G W-3'	ImIm-β-НрІm-γ-РуРуНрРуРу
	259βp)	5'-W G G A T G W-3'	${\tt ImIm-\beta-HpIm-\gamma-PyPy-\beta-PyPy}$
	263β)	5'-W G G A A G W-3'	Ітіт-β-Руіт-ү-РуНрНрРуРу
	263βp)	5'-W G G A A G W-3'	${\tt ImIm-\beta-PyIm-\gamma-PyHp-\beta-PyPy}$
	265β)	5'-W G G A G T W-3'	$ImIm-\beta-ImHp-\gamma-PyPyHpPyPy$
	265βp)	5'-W G G A G T W-3'	${\tt ImIm-\beta-ImHp-\gamma-PyPy-\beta-PyPy}$
	266β)	5'-W G G A G A W-3'	$ImIm-\beta-ImPy-\gamma-HpPyHpPyPy$
	266βp)	5'-W G G A G A W-3'	$ImIm-\beta-ImPy-\gamma-HpPy-\beta-PyPy$
	267β)	5'-W G G A G G W-3'	·ImIm-β-ImIm-γ-РуРуНрРуРу
	267βp)	5'-W G G A G G W-3'	$ImIm-\beta-ImIm-\gamma-PyPy-\beta-PyPy$
	268β)	5'-W G G A G C W-3'	ImIm-β-ImPy-γ-ImPyHpPyPy
	268β p)	5'-W G G A G C W-3'	ImIm-β-ImPy-γ-ImPy-β-PyPy
	271β)	5'-W G G A C G W-3'	ImIm-β-PyIm-γ-PyImHpPyPy
	271βp)	5'-W G G A C G W-3'	ImIm-β-PyIm-γ-PyIm-β-PyPy

_	TABLE 53: 10-ring Hairpin Polyamides for recogni DNA sequence	ition of 7-bp 5'-WGGSNNW-3' with β substitutions.
-		aromatic amino acid sequence
	273β) 5'-W G G G T T W-3'	$ImImIm-\beta-Hp-\gamma-PyPyPyPyPy$
	273βp)·5'-W G G G T T W-3'	ІтІшт-β-Нр-ү-Ру-β-РуРуРу
	274β) 5'-W G G G T A W-3'	ImImIm- β -Py- γ -HpPyPyPyPy
	274βp) 5'-W G G G T A W-3'	ImImIm- β -Py- γ -Hp- β -PyPyPy
	275β) 5'-W G G G T G W-3'	${\tt ImImIm-}\beta\hbox{-}{\tt Im-}\gamma\hbox{-}{\tt PyPyPyPyPy}$
	275βp) 5'-W G G G T G W-3'	${\tt ImImIm-\beta-Im-\gamma-Py-\beta-PyPyPy}$
	276β) 5'-W G G G T C W-3'	${\tt ImImIm-\beta-Py-\gamma-ImPyPyPyPy}$
	276βp) 5'-W G G G T C W-3'	${\tt ImImIm-\beta-Py-\gamma-Im-\beta-PyPyPy}$
	277β) 5'-W G G G A T W-3'	${\tt ImImIm-\beta-Hp-\gamma-PyHpPyPyPy}$
	277 β p) 5'-W G G G A T W-3'	${\tt ImImIm-\beta-Hp-\gamma-Py-\beta-PyPyPy}$
	278β) 5'-W G G G A A W-3'	${\tt ImImIm-}\beta\hbox{-}{\tt Py-}\gamma\hbox{-}{\tt HpHpPyPyPy}$
	278βp) 5'-W G G G A A W-3'	${\tt ImImIm-\beta-Py-\gamma-Hp-\beta-PyPyPy}$
	279β) 5'-W G G G A G W-3'	${\tt ImImIm-\beta-Im-\gamma-PyHpPyPyPy}$
	279βp) 5'-W G G G A G W-3'	${\tt ImImIm-}\beta\hbox{-}{\tt Im-}\gamma\hbox{-}{\tt Py-}\beta\hbox{-}{\tt PyPyPy}$
	280β) 5'-W G G G A C W-3'	${\tt ImImIm-}\beta\hbox{-}{\tt Py-}\gamma\hbox{-}{\tt ImHpPyPyPy}$
	280βp) 5'-W G G G A C W-3'	${\tt ImImIm-\beta-Py-\gamma-Im-\beta-PyPyPy}$
	283β) 5'-W G G G C T W-3'	$\cdots \texttt{ImImIm-}\beta\texttt{-Hp-}\gamma\texttt{-PyImPyPyPy}$
	284β) 5'-W G G G C A W-3'	${\tt ImImIm-\beta-Py-\gamma-HpImPyPyPy}$
	285β) 5'-W G G C T T W-3'	${\tt ImImPyHpHp-\gamma-Py-\beta-ImPyPy}$
	285 eta p) 5'-W G G C T T W-3'	${\tt ImImPy-\beta-Hp-\gamma-Py-\beta-ImPyPy}$
	286β) 5'-W G G C T A W-3'	${\tt ImImPyHpPy-\gamma-Hp-\beta-ImPyPy}$
	286βp) 5'-W G G C T A W-3'	${\tt ImImPy-}\beta\hbox{-}{\tt Py-}\gamma\hbox{-}{\tt Hp-}\beta\hbox{-}{\tt ImPyPy}$
	287β) 5'-W G G С Т G W-3'	$^{\cdot}$ ImIm- β -HpIm- γ -Py- β -ImPyPy
	288β) 5'-W G G C T C W-3'	$ImImPyHpPy-\gamma-Im-\beta-ImPyPy$
	288βр) 5'-W G G С Т С W-3'	ImImPy-β-Py-γ-Im-β-ImPyPy
	289β) 5'-W G G C A T W-3'	ІтПтРуРуНр-ү-Ру-β-ІтРуРу
	289βp) 5'-W G G C A T W-3'	$ImImPy-\beta-Hp-\gamma-Py-\beta-ImPyPy$
	290β) 5'-W G G C A A W-3'	ІтПтРуРуРу-ү-Нр-β-ІтРуРу
	290βp) 5'-W G G C A A W-3'	$ImImPy-\beta-Py-\gamma-Hp-\beta-ImPyPy$
		- · - · - · - ·

	TABLE 53 (cont.):	: 10-ring Hairpin Polyamides for r	ecognition of 7-bp 5'-WGGSNNW-3' with β substitutions.
	DN	NA sequence	aromatic amino acid sequence
	291β) 5'	'-W G G C A G W-3'	${\tt ImIm-\beta-PyIm-\gamma-Py-\beta-ImPyPy}$
	292β) 5'	'-W G G C A C W-3'	${\tt ImImPyPyPy-\gamma-Im-\beta-ImPyPy}$
5	292βp)·5'	'-W G G C A C W-3'	${\tt ImImPy-\beta-Py-\gamma-Im-\beta-ImPyPy}$
	293β) 5'	'-W G G C G T W-3'	${\tt ImIm-\beta-ImHp-\gamma-Py-\beta-ImPyPy}$
	294β) 5'	'-W G G C G A W-3'	${\tt ImIm-\beta-ImPy-\gamma-Hp-\beta-ImPyPy}$
	295β) 5'	'-W G G C C T W-3'	${\tt ImImPyPyHp-\gamma-PyImIm-\beta-Py}$
	296β) 5'	'-W G G C C A W-3'	${\tt ImImPyPyPy-\gamma-HpImIm-\beta-Py}$
10	G19β) 5'	'-W G G G C G W-3'	ImImIm-β-Im-γ-PyImPyPyPy
	G20β) 5'	'-W G G G C C W-3'	${\tt ImImIm-\beta-Py-\gamma-ImImPyPyPy}$
	G21β) 5'	'-W G G C G G W-3'	${\tt ImIm-\beta-ImIm-\gamma-Py-\beta-ImPyPy}$
	G22β) 5'	'-W G G C G C W-3'	${\tt ImIm-\beta-ImPy-\gamma-Im-\beta-ImPyPy}$
	G23β) 5'	'-W G G C C G W-3'	ImIm-β-PyIm-γ-PyImIm-β-Py
15	G24β) 5'	'-W G G C C C W-3'	${\tt ImImPyPyPy-\gamma-ImImIm-\beta-Py}$

DNA sequence aromatic amino acid sequence	
299βp) 5'-W G T T T G W-3' 1mHp-β-HpIm-γ-PyPy-β-PyPy 303β) 5'-W G T T A G W-3' 1mHp-β-PyIm-γ-PyHpPyPyPy 305β) 5'-W G T T A G W-3' 1mHp-β-PyIm-γ-PyHp-β-PyPy 305β) 5'-W G T T G T W-3' 1mHp-β-ImHp-γ-PyPy-β-PyPy 306β) 5'-W G T T G A W-3' 1mHp-β-ImPy-γ-HpPyPyPyPy 306βp) 5'-W G T T G A W-3' 1mHp-β-ImPy-γ-HpPy-β-PyPy 307βp) 5'-W G T T G G W-3' 1mHp-β-ImIm-γ-PyPyPyPyPy 307βp) 5'-W G T T G G W-3' 1mHp-β-ImIm-γ-PyPy-β-PyPy 308βp) 5'-W G T T G C W-3' 1mHp-β-ImPy-γ-ImPy-γ-PyPyPyPy 308βp) 5'-W G T T G C W-3' 1mHp-β-ImPy-γ-ImPy-β-PyPy 308βp) 5'-W G T T G C W-3' 1mHp-β-ImPy-γ-ImPy-β-PyPy 308βp) 5'-W G T T C G W-3' 1mHp-β-PyIm-γ-PyIm-β-PyPy 311βp) 5'-W G T T C G W-3' 1mHp-β-PyIm-γ-PyIm-β-PyPy	
303β) 5'-W G T T A G W-3' ImHp-β-PyIm-γ-PyHpPyPyPy 303βp) 5'-W G T T A G W-3' ImHp-β-PyIm-γ-PyHpPyPyPy 305β) 5'-W G T T G T W-3' ImHp-β-ImHp-γ-PyPyPyPyPy 305βp) 5'-W G T T G T W-3' ImHp-β-ImHp-γ-PyPy-β-PyPy 306β) 5'-W G T T G A W-3' ImHp-β-ImPy-γ-HpPyPyPyPy 306βp) 5'-W G T T G A W-3' ImHp-β-ImPy-γ-HpPy-β-PyPy 307βp) 5'-W G T T G G W-3' ImHp-β-ImIm-γ-PyPyPyPyPyPy 307βp) 5'-W G T T G G W-3' ImHp-β-ImIm-γ-PyPy-β-PyPy 308β) 5'-W G T T G C W-3' ImHp-β-ImPy-γ-ImPyPyPyPyPy 308βp) 5'-W G T T G C W-3' ImHp-β-ImPy-γ-ImPy-β-PyPy 308βp) 5'-W G T T C G W-3' ImHp-β-ImPy-γ-ImPy-β-PyPy 308βp) 5'-W G T T C G W-3' ImHp-β-ImPy-γ-ImPy-β-PyPy 311βp) 5'-W G T T C G W-3' ImHp-β-PyIm-γ-PyIm-β-PyPy	
303βp) 5'-W G T T A G W-3' 305β) 5'-W G T T G T W-3' 305βp) 5'-W G T T G T W-3' 306βp) 5'-W G T T G T W-3' 306βp) 5'-W G T T G A W-3' 307βp) 5'-W G T T G G W-3' 307βp) 5'-W G T T G G W-3' 308β) 5'-W G T T G G W-3' 308βp) 5'-W G T T G C W-3' 308βp) 5'-W G T T G C W-3' 308βp) 5'-W G T T C G W-3'	
305β) 5'-W G T T G T W-3' ImHp-β-ImHp-γ-PyPyPyPyPyPyPyPyPyPyPyPyPyPyPyPyPyPyP	
305βp) 5'-W G T T G T W-3' 306β) 5'-W G T T G A W-3' 306βp) 5'-W G T T G A W-3' 306βp) 5'-W G T T G A W-3' 307βp) 5'-W G T T G G W-3' 307βp) 5'-W G T T G G W-3' 308βp) 5'-W G T T G C W-3' 308βp) 5'-W G T T G C W-3' 308βp) 5'-W G T T G C W-3' 308βp) 5'-W G T T C G W-3'	
306β) 5'-W G T T G A W-3' ImHp-β-ImPy-γ-HpPyPyPyPy 306βp) 5'-W G T T G A W-3' ImHp-β-ImPy-γ-HpPy-β-PyPy 307β) 5'-W G T T G G W-3' ImHp-β-ImIm-γ-PyPyPyPyPyPy 307βp) 5'-W G T T G G W-3' ImHp-β-ImIm-γ-PyPy-β-PyPy 308β) 5'-W G T T G C W-3' ImHp-β-ImPy-γ-ImPyPyPyPy 308βp) 5'-W G T T G C W-3' ImHp-β-ImPy-γ-ImPy-β-PyPy 311β) 5'-W G T T C G W-3' ImHp-β-PyIm-γ-PyImPyPyPy 311βp) 5'-W G T T C G W-3' ImHp-β-PyIm-γ-PyImPyPyPy	
306βp) 5'-W G T T G A W-3' 1mHp-β-1mPy-γ-HpPy-β-PyPy 307β) 5'-W G T T G G W-3' 1mHp-β-1mIm-γ-PyPyPyPyPy 307βp) 5'-W G T T G G W-3' 1mHp-β-1mIm-γ-PyPy-β-PyPy 308β) 5'-W G T T G C W-3' 1mHp-β-1mPy-γ-1mPyPyPyPy 308βp) 5'-W G T T G C W-3' 1mHp-β-1mPy-γ-1mPy-β-PyPy 311β) 5'-W G T T C G W-3' 1mHp-β-PyIm-γ-PyImPyPyPy 311βp) 5'-W G T T C G W-3' 1mHp-β-PyIm-γ-PyIm-β-PyPy	
307β) 5'-W G T T G G W-3' ImHp-β-ImIm-γ-PyPyPyPyPy 307βp) 5'-W G T T G G W-3' ImHp-β-ImIm-γ-PyPy-β-PyPy 308β) 5'-W G T T G C W-3' ImHp-β-ImPy-γ-ImPyPyPyPyPy 308βp) 5'-W G T T G C W-3' ImHp-β-ImPy-γ-ImPy-β-PyPy 311β) 5'-W G T T C G W-3' ImHp-β-PyIm-γ-PyImPyPyPy 311βp) 5'-W G T T C G W-3' ImHp-β-PyIm-γ-PyImPyPyPy	
307βp) 5'-W G T T G G W-3' ImHp-β-ImIm-γ-PyPy-β-PyPy 308β) 5'-W G T T G C W-3' ImHp-β-ImPy-γ-ImPyPyPyPy 308βp) 5'-W G T T G C W-3' ImHp-β-ImPy-γ-ImPy-β-PyPy 311β) 5'-W G T T C G W-3' ImHp-β-PyIm-γ-PyImPyPyPy 311βp) 5'-W G T T C G W-3' ImHp-β-PyIm-γ-PyImPyPyPy	
308β) 5'-W G T T G C W-3' ImHp-β-ImPy-γ-ImPyPyPyPy 308βp) 5'-W G T T G C W-3' ImHp-β-ImPy-γ-ImPy-β-PyPy 311β) 5'-W G T T C G W-3' ImHp-β-PyIm-γ-PyImPyPyPy 311βp) 5'-W G T T C G W-3' ImHp-β-PyIm-γ-PyIm-β-PyPy	
308βp) 5'-W G T T G C W-3'	
311βp) 5'-W G T T C G W-3' ImHp-β-PyIm-γ-PyImPyPyPy 311βp) 5'-W G T T C G W-3' ImHp-β-PyIm-γ-PyIm-β-PyPy	
311βp) 5'-W G T T C G W-3' ImHp-β-PyIm-γ-PyIm-β-PyPy	
315B) 5'-W G T A T G W-3' TMHn-B-HnTm-y-DybyHnDyby	
in a man a m	
315 β p) 5'-W G T A T G W-3' ImHp- β -HpIm- γ -PyPy- β -PyPy	
319 β) 5'-W G T A A G W-3' ImHp- β -PyIm- γ -PyHpHpPyPy	
319 β p) 5'-W G T A A G W-3' ImHp- β -PyIm- γ -PyHp- β -PyPy	
321 β) 5'-W G T A G T W-3' ImHp- β -ImHp- γ -PyPyHpPyPy	
321 β p) 5'-W G T A G T W-3' ImHp- β -ImHp- γ -PyPy- β -PyPy	
322β) 5'-W G T A G A W-3' ImHp-β-ImPy-γ-HpPyHpPyPy	
322 β p) 5'-W G T A G A W-3' ImHp- β -ImPy- γ -HpPy- β -PyPy	
323 β) 5'-W G T A G G W-3' ImHp- β -ImIm- γ -PyPyHpPyPy	
323 β p) 5'-W G T A G G W-3' ImHp- β -ImIm- γ -PyPy- β -PyPy	
324 β) 5'-W G T A G C W-3' ImHp-β-ImPy-γ-ImPyHpPyPy	
324 βp) 5'-W G T A G C W-3' ImHp-β-ImPy-γ-ImPy-β-PyPy	
327 β) 5'-W G T A C G W-3' ImHp-β-PyIm-γ-PyImHpPyPy	
327βp) 5'-W G T A C G W-3' ImHp-β-PyIm-γ-PyIm-β-PyPy	

 DNA	equer	ісе				aromatic amino acid sequence
 329β) 5'-1	7 G :	r G	T	T	W-3'	Im-β-ImHpHp-γ-РуРуРуРуРу
329βp)·5·-1	7 G .	r G	T	T	W-3'	${\tt Im}$ - ${\tt B}$ - ${\tt Im}$ - ${\tt Im}$ - ${\tt PP}$ - ${\tt PP}$ - ${\tt PP}$ - ${\tt PP}$
330β) 5'-1	7 G !	r G	T	A	W-3 '	${\tt Im}$ - ${\tt B}$ - ${\tt Im}$ + ${\tt Im}$ + ${\tt Py}$ - ${\tt Y}$ - ${\tt Hp}$ + ${\tt Py}$ +
330βp 5'-1	7 G :	r G	T	A	W-3'	Іш-β-ІшНрРу-γ-НрРуРу-β-Ру
331β) 5'-1	7 G :	r G	T	G	W-3'	${\tt Im}$ - ${\tt B}$ - ${\tt Im}$ + ${\tt PI}$ + ${\tt PY}$ +
331βp) 5'-	7 G :	T G	T	G	W-3'	${\tt Im}$ - ${\tt B}$ - ${\tt Im}$ + ${\tt Im}$ - ${\tt Y}$ - ${\tt Py}$ - ${\tt Py}$ - ${\tt Py}$ - ${\tt Py}$
332β) 5'-1	7 G '	T G	T	C	W-3'	${\tt Im}$ - ${\tt B}$ - ${\tt Im}$ + ${\tt PP}$ - ${\tt Y}$ - ${\tt Im}$ + ${\tt PY}$ -
332βp) 5'-	7 G '	T G	т	C	W-3'	${\tt Im}-\beta-{\tt Im}{\tt Hp}{\tt Py}-\gamma-{\tt Im}{\tt Py}{\tt Py}-\beta-{\tt Py}$
333β) 5'-	7 G '	T G	A	T	W-3'	${\tt Im} extsf{-}{\tt B} extsf{-}{\tt ImPyHp} extsf{-}{\gamma} extsf{-}{\tt PyHpPyPyPy}$
333βp) 5'-	I G	T G	A	T	W-3'	$Im-\beta-ImPyHp-\gamma-PyHpPy-\beta-Py$
334β) 5'-	I G	T G	A	A	W-3'	Im-β-ImРуРу-γ-НрНрРуРуРу
334βp) 5'-	1 G '	T G	A	A	W-3'	Іт-β-ІтРуРу-ү-НрНрРу-β-Ру
335β) 5'-	1 G	T G	A	G	W-3'	${\tt Im}$ - ${\tt B}$ - ${\tt Im}$ ${\tt Py}$ ${\tt Im}$ - ${\tt Y}$ - ${\tt Py}$ ${\tt Hp}$ ${\tt Py}$ ${\tt Py}$ ${\tt Py}$
335βp) 5'-	7 G	T G	A	G	W-3'	${\tt Im-\beta-ImPyIm-\gamma-PyHpPy-\beta-Py}$
336β) 5'-	V G	T G	A	C	W-3'	${\tt Im}\hbox{-}\beta\hbox{-}{\tt Im}{\tt Py}{\tt Py}\hbox{-}\gamma\hbox{-}{\tt Im}{\tt Hp}{\tt Py}{\tt Py}{\tt Py}$
336βp) 5'-	1 G	T G	A	C	W-3'	${\tt Im}\hbox{-}\beta\hbox{-}{\tt ImPyPy}\hbox{-}\gamma\hbox{-}{\tt ImHpPy}\hbox{-}\beta\hbox{-}{\tt Py}$
337β) 5'-	7 G	T G	G	T	W-3'	${\tt Im-\beta-ImImHp-\gamma-PyPyPyPyPy}$
337βp) 5'-	7 G	T G	G	T	M-3:	${\tt Im-\beta-ImImHp-\gamma-PyPyPy-\beta-Py}$
338β) 5'-	V G	T G	G	A	W-3'	${\tt Im-\beta-ImImPy-\gamma-HpPyPyPyPy}$
338βp) 5'-	V G	ТС	G	A	W-3'	${\tt Im-\beta-ImImPy-\gamma-HpPyPy-\beta-Py}$
339β) 5'-	v G	T G	C	T	W-3'	${\tt Im-\beta-ImPyHp-\gamma-PyImPyPyPy}$
339βp) 5'-	V G	T G	C	T	W-3'	${\tt Im-\beta-ImPyHp-\gamma-PyImPy-\beta-Py}$
340β) 5'-	v G	T G	C	A	W-3'	$^{\cdot}$ Im- eta -ImPyPy- γ -HpImPyPyPy
340βp) 5'-	V G	Т	C	A	W-3'	${\tt Im-\beta-ImPyPy-\gamma-HpImPy-\beta-Py}$
341β) 5'-	Ø G	T G	3 G	G	W-3'	${\tt Im-\beta-ImImIm-\gamma-PyPyPyPyPyPy}$
341βp) 5'-	v G	Т	G	G	W-3'	${\tt Im-\beta-ImImIm-\gamma-PyPyPy-\beta-Py}$
-342β) 5'-	v G	T (G	C	W-3'	Im-β-ImImPy-γ-ImPyPyPyPy
342βp) 5'-	V G	T (G	C	W-3'	Im-β-ImImPy-γ-ImPyPy-β-Py

	TABLE 55 (co	ont.): 10-ring Hairpin Polyamides for recogn	ition of 7-bp 5'-WGTSNNW-3' with β substitutions.
:		DNA sequence	aromatic amino acid sequence
	343βp)	5'-W G T G C G W-3'	Im-β-ImPyIm-γ-PyImPy-β-Py
	344β)	5'-W G T G C C W-3'	Im-β-ImРуРу-γ-ImImРуРуРу
5	344βp)	'5'-W G T G C C W-3'	${\tt Im-\beta-ImPyPy-\gamma-ImImPy-\beta-Py}$
	345β)	5'-W G T C T T W-3'	ІтнрРунрнр-ү-Ру-β-ІтРуРу
	345βp)	5'-W G T C T T W-3'	$ImHpPy-\beta-Hp-\gamma-Py-\beta-ImPyPy$
	346β)	5'-W G T C T A W-3'	ІтНрРуНрРу-ү-Нр-β-ІтРуРу
	346βp)	5'-W G T C T A W-3'	${\tt ImHpPy-}\beta\hbox{-}{\tt Py-}\gamma\hbox{-}{\tt Hp-}\beta\hbox{-}{\tt ImPyPy}$
10	347β)	5'-W G T C T G W-3'	${\tt ImHp-\beta-HpIm-\gamma-Py-\beta-ImPyPy}$
	348ß)	5'-W G T C T C W-3'	ІмНрРуНрРу-ү-Ім-β-ІмРуРу
	348βp)	5'-W G T C T C W-3'	${\tt ImHpPy-\beta-Py-\gamma-Im-\beta-ImPyPy}$
	349β)	5'-W G T C A T W-3'	ІтнрРуРунр-ү-Ру-β-ІтРуРу
	349βp)	5'-W G T C A T W-3'	ІтНрРуРуНр-ү-Ру-β-ІтРуРу
15	350β)	5'-W G T C A A W-3'	${\tt ImHpPyPyPy-\gamma-Hp-\beta-ImPyPy}$
	350βp)	5'-W G T C A A W-3'	${\tt ImHpPy-\beta-Py-\gamma-Hp-\beta-ImPyPy}$
	351 β)	5'-W G T C A G W-3'	ІтНр-β-РуІт-ү-Ру-β-ІтРуРу
	352β)	5'-W G T C A C W-3'	${\tt ImHpPyPyPy-\gamma-Im-\beta-ImPyPy}$
	352βp)	5'-W G T C A C W-3'	${\tt ImHpPy-\beta-Py-\gamma-Im-\beta-ImPyPy}$
20	353β)	5'-W G T C G T W-3'	${\tt ImHp-\beta-ImHp-\gamma-Py-\beta-ImPyPy}$
	354β)	5'-W G T C G A W-3'	${\tt ImHp-\beta-ImPy-\gamma-Hp-\beta-ImPyPy}$
	355β)	5'-W G T C C T W-3'	${\tt ImHpPyPyHp-\gamma-PyImIm-\beta-Py}$
	355βp)	5'-W G T C C T W-3'	${\tt Im-\beta-PyPyHp-\gamma-PyImIm-\beta-Py}$
	356 β)	5'-W G T C C A W-3'	ImHpPyPyPy-γ-HpImIm-β-Py
25	356βp)	5'-W G T C C A W-3'	${\tt Im-\beta-PyPyPy-\gamma-HpImIm-\beta-Py}$
	357β)	5'-W G T C G G W-3'	ImHp-β-ImIm-γ-Py-β-ImPyPy
	358β)	5'-W G T C G C W-3'	ImHp-β-ImPy-γ-Im-β-ImPyPy
	359β)	5'-W G T C C G W-3'	ImHp-β-PyIm-γ-PyImIm-β-Py
	360β)	5'-W G T C C C W-3'	ІтнрРуРуРу-ү-Ітптт-β-Ру
30	360βp)	5'-W G T C C C W-3'	${\tt Im-\beta-PyPyPy-\gamma-ImImIm-\beta-Py}$

	TABLE 56:	10-ring Hairpin Polyamides for recognition	of 7-bp 5'-WGAWNNW-3' with β substitutions.
		DNA sequence	aromatic amino acid sequence
	363β)	5'-W G A T T G W-3'	ImPy-β-HpIm-γ-РуРуРуНрРу
	363βp)	5'-W G A T T G W-3'	ІтРу-β-НрІт-ү-РуРу-β-НрРу
5	367β) ·	5'-W G A T A G W-3'	ІтРу-β-РуІт-ү-РуНрРуНрРу
	367βp)	5'-W G A T A G W-3'	ІтРу-β-РуІт-ү-РуНр-β-НрРу
	369β)	5'-W G A T G T W-3'	ІмРу-β-ІмНр-ү-РуРуРуНрРу
	369βp)	5'-W.G A T G T W-3'	${\tt ImPy-\beta-ImHp-\gamma-PyPy-\beta-HpPy}$
	370β)	5'-W G A T G A W-3'	ІтРу-β-ІтРу-ү-НрРуРуНрРу
10	370βp)	5'-W G A T G A W-3'	${\tt ImPy-\beta-ImPy-\gamma-HpPy-\beta-HpPy}$
	371β)	5'-W G A T G G W-3'	ІтРу-β-Ітіт-ү-РуРуРуНрРу
	371βp)	5'-W G A T G G W-3'	${\tt ImPy-\beta-ImIm-\gamma-PyPy-\beta-HpPy}$
	372β)	5'-W G A T G C W-3'	ІтРу-β-ІтРу-ү-ІтРуРуНрРу
	$372\beta p)$	5'-W G A T G C W-3'	${\tt ImPy-\beta-ImPy-\gamma-ImPy-\beta-HpPy}$
15	375β)	5'-W G A T C G W-3'	ІтРу-β-РуІт-ү-РуІтРуНрРу
	375βp)	5'-W G A T C G W-3'	ImPy-β-PyIm-γ-PyIm-β-HpPy
	379β)	5'-W G A A T G W-3'	ІтРу-β-НрІт-ү-РуРуНрНрРу
	379βp)	5'-W G A A T G W-3'	${\tt ImPy-\beta-HpIm-\gamma-PyPy-\beta-HpPy}$
	383β)	5'-W G A A A G W-3'	${\tt ImPy-}\beta\hbox{-PyIm-}\gamma\hbox{-PyHpHpHpPy}$
20	383βp)	5'-W G A A A G W-3'	${\tt ImPy-\beta-PyIm-\gamma-PyHp-\beta-HpPy}$
	385β)	5'-W G A A G T W-3'	${\tt ImPy-}\beta\hbox{-}{\tt ImHp-}\gamma\hbox{-}{\tt PyPyHpHpPy}$
	385βp)	5'-W G A A G T W-3'	${\tt ImPy-\beta-ImHp-\gamma-PyPy-\beta-HpPy}$
	386β)	5'-W G A A G A W-3'	${\tt ImPy-}\beta\hbox{-}{\tt ImPy-}\gamma\hbox{-}{\tt HpPyHpHpPy}$
	386β p)	5'-W G A A G A W-3'	${\tt ImPy-}\beta\hbox{-}{\tt ImPy-}\gamma\hbox{-}{\tt HpPy-}\beta\hbox{-}{\tt HpPy}$
25	387β)	5'-W G A A G G W-3'	${\tt ImPy-\beta-ImIm-\gamma-PyPyHpHpPy}$
	387βp)	5'-W G A A G G W-3'	${\tt ImPy-\beta-ImIm-\gamma-PyPy-\beta-HpPy}$
	388β)	5'-W G A A G C W-3'	${\tt ImPy-\beta-ImPy-\gamma-ImPyHpHpPy}$
	388βp)	5'-W G A A G C W-3'	${\tt ImPy-\beta-ImPy-\gamma-ImPy-\beta-HpPy}$
	391β)	5'-W G A A C G W-3'	${\tt ImPy-}\beta\hbox{-PyIm-}\gamma\hbox{-PyImHpHpPy}$
30	$391\beta p)$	5'-W G A A C G W-3'	${\tt ImPy-\beta-PyIm-\gamma-PyIm-\beta-HpPy}$

	TABLE 57	: 10-ring Hairpin Polyamides for recognit	tion of 7-bp 5'-WGASNNW-3' with β substitutions.
==		DNA sequence	aromatic amino acid sequence
	393β)	5'-W G A G T T W-3'	${\tt Im-\beta-ImHpHp-\gamma-PyPyPyHpPy}$
	394βp)	5'-W G A G T A W-3'	${\tt Im-\beta-ImHpPy-\gamma-HpPyPy-\beta-Py}$
5	395β)	·5'-W G A G T G W-3'	${\tt Im-\beta-ImHpIm-\gamma-PyPyPyHpPy}$
	395βp)	5'-W G A G T G W-3'	$Im-\beta-ImHpIm-\gamma-PyPyPy-\beta-Py$
	396β)	5'-W G A G T C W-3'	Im-β-ImHpРу-γ-ImРуРуНpРу
	396βp)	5'-W G A G T C W-3'	${\tt Im-\beta-ImHpPy-\gamma-ImPyPy-\beta-Py}$
	397 β)	5'-W G A G A T W-3'	Іm-β-ІmРуНр-γ-РуНрРуНрРу
10	397βp)	5'-W G A G A T W-3'	${\tt Im-\beta-ImPyHp-\gamma-PyHpPy-\beta-Py}$
	398 β)	5'-W G A G A A W-3'	${\tt Im-\beta-ImPyPy-\gamma-HpHpPyHpPy}$
	398βp)	5'-W G A G A A W-3'	${\tt Im-\beta-ImPyPy-\gamma-HpHpPy-\beta-Py}$
	399 β)	5'-W G A G A G W-3'	${\tt Im-\beta-ImPyIm-\gamma-PyHpPyHpPy}$
	399βp)	5'-W G A G A G W-3'	${\tt Im-\beta-ImPyIm-\gamma-PyHpPy-\beta-Py}$
15	400β)	5'-W G A G A C W-3'	${\tt Im-\beta-ImPyPy-\gamma-ImHpPyHpPy}$
	$400 \beta p)$	5'-W G A G A C W-3'	${\tt Im-eta-ImPyPy-\gamma-ImHpPy-eta-Py}$
	401 β)	5'-W G A G G T W-3'	${\tt Im-\beta-ImImHp-\gamma-PyPyPyHpPy}$
	$401\beta p$)	5'-W G A G G T W-3'	${\tt Im-\beta-ImImHp-\gamma-PyPyPy-\beta-Py}$
	402β)	5'-W G A G G A W-3'	${\tt Im-\beta-ImImPy-\gamma-HpPyPyHpPy}$
20	402βp)	5'-W G A G G A W-3'	\cdot Im- β -ImImPy- γ -HpPyPy- β -Py
	403β)	5'-W G A G C T W-3'	${\tt Im-\beta-ImPyHp-\gamma-PyImPyHpPy}$
	403βp)	5'-W G A G C T W-3'	${\tt Im-\beta-ImPyHp-\gamma-PyImPy-\beta-Py}$
	404 β)	5'-W G A G C A W-3'	${\tt Im-\beta-ImPyPy-\gamma-HpImPyHpPy}$
	$404\beta p$)	5'-W G A G C A W-3'	${\tt Im-\beta-ImPyPy-\gamma-HpImPy-\beta-Py}$
25	405β)	5'-W G A G G G W-3'	${\tt Im-\beta-ImImIm-\gamma-PyPyPyHpPy}$
	405βp)	5'-W G A G G G W-3'	$Im extsf{-}\beta extsf{-}ImImIm extsf{-}\gamma extsf{-}PyPyPy extsf{-}\beta extsf{-}Py$
	406β)	5'-W G A G G C W-3'	${\tt Im-\beta-ImImPy-\gamma-ImPyPyHpPy}$
	406βp)	5'-W G A G G C W-3'	${\tt Im-\beta-ImImPy-\gamma-ImPyPy-\beta-Py}$
	407β)	5'-W G A G C G W-3'	${\tt Im-\beta-ImPyIm-\gamma-PyImPyHpPy}$
30		5'-W G A G C G W-3'	${\tt Im-\beta-ImPyIm-\gamma-PyImPy-\beta-Py}$
	408 β)	5'-W G A G C C W-3'	${\tt Im-\beta-ImPyPy-\gamma-ImImPyHpPy}$
	408βp)	5'-W G A G C C W-3'	${\tt Im-\beta-ImPyPy-\gamma-ImImPy-\beta-Py}$

-	TABLE 57 (co	nt): 10-ring Hairpin Polyamides for recogni	tion of 7-bp 5'-WGASNNW-3' with β substitutions.
-		DNA sequence	aromatic amino acid sequence
	409β)	5'-W G A C T T W-3'	ІтРуРуНрНр-ү-Ру-β-ІтНрРу
	409βp)	5'-W G A C T T W-3'	ІтРуРу-β-Нр-ү-Ру-β-ІтНрРу
5	410β)	'5'-W G A C T A W-3'	${\tt ImPyPyHpPy-\gamma-Hp-\beta-ImHpPy}$
	410 β p)	5'-W G A C T A W-3'	${\tt ImPyPy-\beta-Py-\gamma-Hp-\beta-ImHpPy}$
	411 β)	5'-W G A C T G W-3'	${\tt ImPy-\beta-HpIm-\gamma-Py-\beta-ImHpPy}$
	412 β)	5'-W G A C T C W-3'	${\tt ImPyPyHpPy-\gamma-Im-\beta-ImHpPy}$
	412βp)	5'-W G A C T C W-3'	$ImPyPy-\beta-Py-\gamma-Im-\beta-ImHpPy$
10	413β)	5'-W G A C A T W-3'	${\tt ImPyPyPyHp-\gamma-Py-\beta-ImHpPy}$
	413 β p)	5'-W G A C A T W-3'	ІтРуру-β-Нр-ү-Ру-β-ІтНрРу
	414β)	5'-W G A C A A W-3'	ІтРуруруру-ү-Нр-β-ІтНрРу
	414 β p)	5'-W G A C A A W-3'	${\tt ImPyPy-\beta-Py-\gamma-Hp-\beta-ImHpPy}$
	415β)	5'-W G A C A G W-3'	${\tt ImPy-\beta-PyIm-\gamma-Py-\beta-ImHpPy}$
15	416β)	5'-W G A C A C W-3'	${\tt ImPyPyPyPy-\gamma-Im-\beta-ImHpPy}$
	416βp)	5'-W G A C A C W-3'	ImPyPy-β-Py-γ-Im-β-ImHpPy
	417β)	5'-W G A C G T W-3'	${\tt ImPy-\beta-ImHp-\gamma-Py-\beta-ImHpPy}$
	418β)	5'-W G A C G A W-3'	${\tt ImPy-\beta-ImPy-\gamma-Hp-\beta-ImHpPy}$
	419β)	5'-W G A C C T W-3'	${\tt Im-\beta-PyPyHp-\gamma-PyImIm-\beta-Py}$
20	419βp)	5'-W G A C C T W-3'	${\tt ImPyPyPyHp-\gamma-PyImIm-\beta-Py}$
	420β)	5'-W G A C C A W-3'	${\tt Im-\beta-PyPyPy-\gamma-HpImIm-\beta-Py}$
	420βp)	5'-W G A C C A W-3'	${\tt ImPyPyPyPy-\gamma-HpImIm-\beta-Py}$
	421β)	5'-W G A C G G W-3'	${\tt ImPy-\beta-ImIm-\gamma-Py-\beta-ImHpPy}$
	422β)	5'-W G A C G C W-3'	${\tt ImPy-\beta-ImPy-\gamma-Im-\beta-ImHpPy}$
25	423β)	5'-W G A C C G W-3'	${\tt ImPy-\beta-PyIm-\gamma-PyImIm-\beta-Py}$
	424 β)	5'-W G A C C C W-3'	·ImPyPyPyPy-γ-ImImIm-β-Py
	424βp)	5'-W G A C C C W-3'	${\tt Im} extstyle{-}eta extstyle{-}eta extstyle{-}{\tt ImImIm} extstyle{-}eta extstyle{-}{\tt Py}$

426; 426; 427; 428; 428; 429; 429;	3p) 5 ' - W 3) 5 ' - W 3p) 5 ' - W 3j) 5 ' - W 3p) 5 ' - W	G G G G G G G G		T T T T T T T T A T A	T A G C C	W-3' W-3' W-3'	ImPyHpHpHp $-\gamma$ -PyPy $-\beta$ -ImPy ImPy $-\beta$ -HpHp $-\gamma$ -PyPy $-\beta$ -ImPy ImPyHpHpPy $-\gamma$ -HpPy $-\beta$ -ImPy ImPy $-\beta$ -HpPy $-\gamma$ -HpPy $-\beta$ -ImPy ImPy $-\beta$ -HpPim $-\gamma$ -PyPy $-\beta$ -ImPy ImPyHpHpPy $-\gamma$ -ImPy $-\beta$ -ImPy ImPy $-\beta$ -HpPy $-\gamma$ -ImPy $-\beta$ -ImPy ImPyHpPyHp $-\gamma$ -PyHp $-\beta$ -ImPy
4266 4276 4286 4286 4296 4306 4306 4316 4326 4326 4336 4346	3) 5'-W 3p) 5'-W 3) 5'-W 3p) 5'-W	G G G G G G G G		T T T T T T T A	A G C T	W-3' W-3' W-3' W-3'	eq:limpyhphppy-g-limpy-b-limp
426 427 428 428 429 429 430 430 431 432 432 433 434 435	3p) 5'-W 3) 5'-W 3) 5'-W 3p) 5'-W 3p) 5'-W 3p) 5'-W 3p) 5'-W 3p) 5'-W 3p) 5'-W	G G G G G G G		TTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT	A G C T	W-3' W-3' W-3'	$\label{eq:limby-beta-ppy-g-impy} \begin{split} &\text{Impy-}\beta\text{-Hppy-}\gamma\text{-Hppy-}\beta\text{-Impy} \\ &\text{Impy-}\beta\text{-HpIm-}\gamma\text{-Pypy-}\beta\text{-Impy} \\ &\text{ImpyHpHppy-}\gamma\text{-Impy-}\beta\text{-Impy} \\ &\text{Impy-}\beta\text{-Hppy-}\gamma\text{-Impy-}\beta\text{-Impy} \end{split}$
4276 4286 4286 4296 4306 4306 4316 4326 4326 4336 4346	3) 5'-W 3) 5'-W 3p) 5'-W 3p) 5'-W 3p) 5'-W 3p) 5'-W 3p) 5'-W 3p) 5'-W	G G G G		TTTTTA	G C C	W-3' W-3'	$\label{eq:control_impy} \begin{split} &\text{ImPy-}\beta\text{-HpIm-}\gamma\text{-PyPy-}\beta\text{-ImPy} \\ &\text{ImPyHpHpPy-}\gamma\text{-ImPy-}\beta\text{-ImPy} \\ &\text{ImPy-}\beta\text{-HpPy-}\gamma\text{-ImPy-}\beta\text{-ImPy} \end{split}$
4286 4286 4296 4306 4306 4316 4326 4326 4336 4346	3) 5'-W 3p) 5'-W 3) 5'-W 3p) 5'-W 3p) 5'-W 3p) 5'-W 3p) 5'-W	G G G G		r t r t r a r a	C C T	M-3;	$\label{eq:control_impy} \begin{split} &\text{ImPyHpHpPy-}\gamma\text{-}&\text{ImPy-}\beta\text{-}&\text{ImPy} \\ &\text{ImPy-}\beta\text{-}&\text{HpPy-}\gamma\text{-}&\text{ImPy-}\beta\text{-}&\text{ImPy} \\ \end{split}$
4286 4296 4306 4306 4316 4326 4326 4336 4346	3p) 5'-W 3) 5'-W 3p) 5'-W 3) 5'-W 3p) 5'-W 3p) 5'-W	G G G G	C 1 C 1 C 1	T T A T A T	C T	W-3'	${\tt ImPy-\beta-HpPy-\gamma-ImPy-\beta-ImPy}$
429(429(430(431(432(432(433(434(435(3) 5'-W 3p) 5'-W 3) 5'-W 3p) 5'-W 3) 5'-W	G G G	C 1	A 1	T		
429(430(430(431(432(432(433(434(435(3p) 5'-W 3) 5'-W 3p) 5'-W 3) 5'-W	G G	C 1	ГА		W-3'	ІтРуНрРуНр-ү-РуНр-β-ІтРу
430(430(431(432(432(433(434(435(β) 5'-W βp) 5'-W β) 5'-W	G G	C I		т		
430(431(432(432(433(434(435(Вр) 5'-W В) 5'-W	G				M-3 .	${\tt ImPy-}eta-{\tt PyHp-}\gamma-{\tt PyHp-}eta-{\tt ImPy}$
431, 432, 432, 433, 434,	3) 5'-W			r A	A	W-3'	ІπРуНрРуРу-γ-НрНр-β-ІπРу
432(432(433(434(435(G	C 1	r a	A	W-3'	${\tt ImPy-\beta-PyPy-\gamma-HpHp-\beta-ImPy}$
432(433(434(435(3) 5'-W	_	C 7	ΓА	G	W-3'	${\tt ImPy-\beta-PyIm-\gamma-PyHp-\beta-ImPy}$
433[434[435[G	C	ΓA	C	W-3'	${\tt ImPyHpPyPy-\gamma-ImHp-\beta-ImPy}$
434 435	Bp) 5'-₩	G	C	ΓA	C	W-3'	$ImPy-\beta-PyPy-\gamma-ImHp-\beta-ImPy$
435	3) 5'-W	G	C	r G	T	W-3'	$ImPy-\beta-ImHp-\gamma-PyPy-\beta-ImPy$
-	3) 5'-W	G	C:	r G	A	W-3'	${\tt ImPy-\beta-ImPy-\gamma-HpPy-\beta-ImPy}$
436	3) 5י-₩	G	C :	r G	G	W-3'	${\tt ImPy-\beta-ImIm-\gamma-PyPy-\beta-ImPy}$
	3) 5'-W	G	C:	r G	C	W-3'	${\tt ImPy-\beta-ImPy-\gamma-ImPy-\beta-ImPy}$
437	3) 5'-W	G	C :	r c	T	W-3'	${\tt ImPyHpPyHp-\gamma-PyIm-\beta-ImPy}$
437	3p) 5'-W	G	C :	ГС	T	W-3'	${\tt ImPy-\beta-PyHp-\gamma-PyIm-\beta-ImPy}$
438	3) 5'-W	G	C :	r c	A	W-3'	${\tt ImPyHpPyPy-\gamma-HpIm-\beta-ImPy}$
438	3p) 5'-₩	G	C:	r c	A	W-3'	${\tt ImPy-\beta-PyPy-\gamma-HpIm-\beta-ImPy}$
439	3) 5'-W	G	C :	r c	G	W-3'	ImPy-β-PyIm-γ-PyIm-β-ImPy
440	3) 5י-₩	G	C :	r c	C	W-3'	${\tt ImPyHpPyPy-\gamma-ImIm-\beta-ImPy}$
440	3p) 5'-₩	G	C :	r c	C	W-3'	${\tt ImPy-\beta-PyPy-\gamma-ImIm-\beta-ImPy}$
441	3) 5'-W	G	C	A T	T	W-3'	${\tt ImPyPyHpHp-\gamma-PyPy-\beta-ImPy}$
441(βp) 5'-₩	G	C	A T	T	W-3'	${\tt ImPy-\beta-HpHp-\gamma-PyPy-\beta-ImPy}$
442[β) 5'-W	G	C	A T	A	W-3'	${\tt ImPyPyHpPy-\gamma-HpPy-\beta-ImPy}$
442	βp) 5'-W	G	C	АТ	Α	W-3'	${\tt ImPy-\beta-HpPy-\gamma-HpPy-\beta-ImPy}$

•	TABLE 58 (co	ont): 10-ring Hairpin Polyamides for recogni	tion of 7-bp 5'-WGCWNNW-3' with β substitutions.
		DNA sequence	aromatic amino acid sequence
	444 β)	5'-W G C A T C W-3'	ImРуРуНрРу-γ-ImРу-β-ImРу
	444βp)	5'-W G C A T C W-3'	${\tt ImPy-\beta-HpPy-\gamma-ImPy-\beta-ImPy}$
5	445 β)	·5'-W G C A A T W-3'	ІтРУРУРУНР-7-РУНР-β-ІтРУ
	445βp)	5'-W G C A A T W-3'	ІтРу-β-РуНр-ү-РуНр-β-ІтРу
	446 β)	5'-W G C A A A W-3'	ІшРуРуРуРу-γ-НрНр-β-ІшРу
	446βp)	5'-W G C A A A W-3'	${\tt ImPy-\beta-PyPy-\gamma-HpHp-\beta-ImPy}$
	447β)	5'-W G C A A G W-3'	$ImPy-\beta-PyIm-\gamma-PyHp-\beta-ImPy$
10	448β)	5'-W G C A A C W-3'	ImPyPyPyPy-γ-ImHp-β-ImPy
	448βp)	5'-W G C A A C W-3'	$ImPy-\beta-PyPy-\gamma-ImHp-\beta-ImPy$
	449B)	5'-W G C A G T W-3'	${\tt ImPy-\beta-ImHp-\gamma-PyPy-\beta-ImPy}$
	450β)	5'-W G C A G A W-3'	${\tt ImPy-\beta-ImPy-\gamma-HpPy-\beta-ImPy}$
	451 β)	5'-W G C A G G W-3'	ImPy-β-ImIm-γ-PyPy-β-ImPy
15	452β)	5'-W G C A G C W-3'	ImPy-β-ImPy-γ-ImPy-β-ImPy
	453β)	5'-W G C A C T W-3'	ImРуРуРуНр-γ-РуІm-β-ІmРу
	453βp)	5'-W G C A C T W-3'	${\tt ImPy-\beta-PyHp-\gamma-PyIm-\beta-ImPy}$
	454β)	5'-W G C A C A W-3'	ImPyPyPyPy-γ-HpIm-β-ImPy
	$454\beta p)$	5'-W G C A C A W-3'	${\tt ImPy-}\beta\hbox{-}{\tt PyPy-}\gamma\hbox{-}{\tt HpIm-}\beta\hbox{-}{\tt ImPy}$
20	455β) -	. '5'-W G C A C G W-3'	${\tt ImPy-\beta-PyIm-\gamma-PyIm-\beta-ImPy}$
	456β)	5'-W G C A C C W-3'	ІmРуРуРуРу-γ-ІmІm-β-ІmРу
	456βp)	5'-W G C A C C W-3'	ImPy-\beta-PyPy-\gamma-\beta-ImPy

_		DNA sequence	aromatic amino acid sequence
	457β)	5'-W G C G T T W-3'	${\tt Im}$ - ${\tt B}$ - ${\tt Im}$ + ${\tt Im}$ + ${\tt Py}$ - ${\tt Py}$ - ${\tt Py}$ - ${\tt Im}$ -
	458β)	·5'-W G C G T A W-3'	${\tt Im-\beta-ImHpPy-\gamma-HpPy-\beta-ImPy}$
	459β)	5'-W G C G T G W-3'	${\tt Im-\beta-ImHpIm-\gamma-PyPy-\beta-ImPy}$
	460 β)	5'-W G C G T C W-3'	${\tt Im-\beta-ImHpPy-\gamma-ImPy-\beta-ImPy}$
	461β)	5'-W G C G A T W-3'	${\tt Im-\beta-ImPyHp-\gamma-PyHp-\beta-ImPy}$
	462β)	5'-W G C G A A W-3'	${\tt Im}$ - ${\tt \beta}$ - ${\tt ImPyPy}$ - ${\tt \gamma}$ - ${\tt HpHp}$ - ${\tt \beta}$ - ${\tt ImPy}$
	463β)	5'-W G C G A G W-3'	${\tt Im-\beta-ImPyIm-\gamma-PyHp-\beta-ImPy}$
	464β)	5'-W G C G A C W-3'	${\tt Im-\beta-ImPyPy-\gamma-ImHp-\beta-ImPy}$
	465β)	5'-W G C G G T W-3'	${\tt Im} extstyle{-}eta extstyle{-}{\tt Im}{\tt Im}{\tt Im} extstyle{-}\gamma extstyle{-}{\tt Im}{\tt Py}$
	466 β)	5'-W G C G G A W-3'	${\tt Im-\beta-ImImPy-\gamma-HpPy-\beta-ImPy}$
	467 β)	5'-W G C G C T W-3'	${\tt Im}\hbox{-}\beta\hbox{-}{\tt ImPyHp}\hbox{-}\gamma\hbox{-}{\tt PyIm}\hbox{-}\beta\hbox{-}{\tt ImPy}$
	468 β)	5'-W G C G C A W-3'	${\tt Im-\beta-ImPyPy-\gamma-HpIm-\beta-ImPy}$
	469 β)	5'-W G C C T T W-3'	${\tt ImPyPyHpHp-\gamma-Py-\beta-ImImPy}$
	469βp)	5'-W G C C T T W-3'	${\tt ImPyPy-\beta-Hp-\gamma-Py-\beta-ImImPy}$
	470β)	5'-W G C C T A W-3'	${\tt ImPyPyHpPy-\gamma-Hp-\beta-ImImPy}$
	470βp)	5'-W G C C T A W-3'	${\tt ImPyPy-\beta-Py-\gamma-Hp-\beta-ImImPy}$
	471β)	5'-W G C C T G W-3'	${\tt ImPy-\beta-HpIm-\gamma-Py-\beta-ImImPy}$
	472β)	5'-W G C C T C W-3'	$ImPyPyHpPy-\gamma-Im-\beta-ImImPy$
	472βp)	5'-W G C C T C W-3'	${\tt ImPyPy-\beta-Py-\gamma-Im-\beta-ImImPy}$
	473β)	5'-W G C C A T W-3'	${\tt ImPyPyPyHp-\gamma-Py-\beta-ImImPy}$
	473βp)	5'-W G C C A T W-3'	${\tt ImPyPy-}\beta{\tt -Hp-}\gamma{\tt -Py-}\beta{\tt -ImImPy}$
	474β)	5'-W G C C A A W-3'	$ImPyPyPyPy-\gamma-Hp-\beta-ImImPy$
	474βp)	5'-W G C C A A W-3'	$^{\circ}$ ImPyPy- β -Py- γ -Hp- β -ImImPy
	475β)	5'-W G C C A G W-3'	${\tt ImPy-\beta-PyIm-\gamma-Py-\beta-ImImPy}$
	476β)	5'-W G C C A C W-3'	ImPyPyPyPy-γ-Im-β-ImImPy
	476βp)	5'-W G C C A C W-3'	${\tt ImPyPy-\beta-Py-\gamma-Im-\beta-ImImPy}$
	477β)	5'-W G C C G T W-3'	ImPy-β-ImHp-γ-Py-β-ImImPy

	TABLE 59 (c	cont): 10-ring Hairpin Polyamides for rec	ognition of 7-bp 5'-WGCSNNW-3' with β substitutions.
		DNA sequence	aromatic amino acid sequence
	G25 β)	5'-W G C G G G W-3'	Im-β-ImImIm-γ-РуРу-β-ImPy
	G26 β)	5'-W G C G G C W-3'	${\tt Im-\beta-ImImPy-\gamma-ImPy-\beta-ImPy}$
5	G27 β)	·5'-W G C G C G W-3'	${\tt Im-\beta-ImPyIm-\gamma-PyIm-\beta-ImPy}$
	G28 β)	5'-W G C G C C W-3'	${\tt Im-\beta-ImPyPy-\gamma-ImIm-\beta-ImPy}$
	G29 β)	5'-W G C C G G W-3'	$ImPy-\beta-ImIm-\gamma-Py-\beta-ImImPy$
	G30 β)	5'-W G C C G C W-3'	$ImPy-\beta-ImPy-\gamma-Im-\beta-ImImPy$
	G31 β)	5'-W G C C C G W-3'	${\tt ImPy-\beta-PyIm-\gamma-PyImImImPy} .$

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	DNA sequence	gnition of 7-bp 5'-WCGWNNW-3' with β substitu aromatic amino acid sequence
481β)	5'-W C G T T T W-3'	РуІтнрнрнр-ү-РуРу-β-РуІт
481βp)	5'-W C G T T T W-3'	$PyIm-\beta-HpHp-\gamma-PyPy-\beta-PyIm$
482β)	5'-W C G T T A W-3'	РуІmHpHpРу- γ -HpРу- β -РуІm
482βp)	5'-W C G T T A W-3'	Руіт-β-НрРу-ү-НрРу-β-Руіт
483β)	5'-W C G T T G W-3'	${\tt PyIm-\beta-HpIm-\gamma-PyPy-\beta-PyIm}$
484β)	5'-W C G T T C W-3'	РуІmHpHpPy- γ -ІmPy- β -РуІm
484βp)	5'-W C G T T C W-3'	РуІт-β-НрРу-ү-ІтРу-β-РуІт
485β)	5'-W C G T A T W-3'	РуІтНрРуНр-ү-РуНр-β-РуІт
485βp)	5'-W C G T A T W-3'	Руіт-β-РуНр-ү-РуНр-β-Руіт
486β)	5'-W C G T A A W-3'	$PyImHpPyPy-\gamma-HpHp-\beta-PyIm$
486βp)	5'-W C G T A A W-3'	Руіт-β-РуРу-ү-НрНр-β-Руіт
487β)	5'-W C G T A G W-3'	${\tt PyIm-\beta-PyIm-\gamma-PyHp-\beta-PyIm}$
488β)	5'-W C G T A C W-3'	$PyImHpPyPy-\gamma-ImHp-\beta-PyIm$
488βp)	5'-W C G T A C W-3'	PyIm- β -PyPy- γ -ImHp- β -PyIm
489β)	5'-W C G T G T W-3'	${\tt PyIm-\beta-ImHp-\gamma-PyPy-\beta-PyIm}$
490β)	5'-W C G T G A W-3'	$\mathtt{PyIm}\text{-}\beta\text{-}\mathtt{Im}\mathtt{Py}\text{-}\gamma\text{-}\mathtt{Hp}\mathtt{Py}\text{-}\beta\text{-}\mathtt{Py}\mathtt{Im}$
491 β)	5'-W C G T G G W-3'	PýIm-β-ImIm-γ-PyPy-β-PyIm
492 β)	5'-W C G T G C W-3'	PyIm-β-ImPy-γ-ImPy-β-PyIm
493 β)	5'-W C G T C T W-3'	$PyImHpPyHp-\gamma-PyIm-eta-PyIm$
493βp)	5'-W C G T C T W-3'	$\mathtt{PyIm}\text{-}\beta\text{-}\mathtt{PyHp}\text{-}\gamma\text{-}\mathtt{PyIm}\text{-}\beta\text{-}\mathtt{PyIm}$
494β)	5'-W C G T C A W-3'	${\tt PyImHpPyPy-\gamma-HpIm-\beta-PyIm}$
494 β p)	5'-W C G T C A W-3'	${\tt PyIm-\beta-PyPy-\gamma-HpIm-\beta-PyIm}$
495β)	5'-W C G T C G W-3'	'PyIm-β-PyIm-γ-PyIm-β-PyIm
496 β)	5'-W C G T C C W-3'	${\tt PyImHpPyPy-\gamma-ImIm-\beta-PyIm}$
496βp)	5'-W C G T C C W-3'	PyIm-β-PyPy-γ-ImIm-β-PyIm
497 β)	5'-W C G A T T W-3'	${\tt PyImPyHpHp-\gamma-PyPy-\beta-PyIm}$
497βp)	5'-W C G A T T W-3'	$PyIm-\beta-HpHp-\gamma-PyPy-\beta-PyIm$
498 β)	5'-W C G A T A W-3'	${\tt PyImPyHpPy-\gamma-HpPy-\beta-PyIm}$
498βp)	5'-W C G A T A W-3'	$PyIm-\beta-HpPy-\gamma-HpPy-\beta-PyIm$

-	TABLE 60 (cor	ıt): 10-rii	ng I	Hai	rpi	n Pe	olya	amides for recognit	ion of 7-bp 5'-WCGWNNW-3' with β substitutions.
-		DNA se							aromatic amino acid sequence
	499 β)	5'-W	С	G	A	T	G	W-3'	РуІт-β-НрІт-ү-РуРу-β-РуІт
	500β)	5'-W	C	G	A	T	С	W-3'	PyImPyHpPy-γ-ImPy-β-PyIm
5	500βp)	5'-W	С	G	A	T	C	W-3'	PyIm-β-HpPy-γ-ImPy-β-PyIm
	501β)	5 'W	C	G	A	A	T	W-3'	РуІmРуРуНр- γ -РуНр- β -РуІm
	501βp)	5'-W	C	G	A	A	T	W-3'	РуІт-β-РуНр-ү-РуНр-β-РуІт
	502β)	5 ' -W	C	G	A	A	À	W-3'	$PyImPyPyPy-\gamma-HpHp-eta-PyIm$
	502βp)	5'-W	C	G	A	A	A	W-3'	$PyIm-\beta-PyPy-\gamma-HpHp-\beta-PyIm$
10	503β)	5'-W	С	G	A	A	G	W-3'	PyIm-β-PyIm-γ-PyHp-β-PyIm
	504 β)	5'-W	C	G	A	A	C	W-3'	$PyImPyPyPy-\gamma-ImHp-\beta-PyIm$
	504βp)	5 ' -W	C	G	A	A	C	W-3'	PyIm-β-PyPy-γ-ImHp-β-PyIm
	505β)	5'-W	C	G	A	G	T	W-3'	$PyIm-\beta-ImHp-\gamma-PyPy-\beta-PyIm$
	506 β)	5 ' -W	C	G	A	G	A	W-3'	PyIm-β-ImPy-γ-HpPy-β-PyIm
15	507β)	5 ' -W	C	G	A	G	G	W-3'	PyIm- β -ImIm- γ -PyPy- β -PyIm
	508β)	5 ' -W	C	G	A	G	C	W-3'	PyIm-β-ImPy-γ-ImPy-β-PyIm
	509β)	5'-W	C	G	A	C	T	W-3'	$PyImPyPyHp-\gamma-PyIm-\beta-PyIm$
	509βp)	5'-W	C	G	A	C	T	W-3'	PyIm-β-PyHp-γ-PyIm-β-PyIm
	510β)	5'-W	C	G	A	C	A	W-3'	${\tt PyImPyPyPy-\gamma-HpIm-\beta-PyIm}$
20	510βp)	5'-W	C	G	A	C	A	W-3'	PyIm-β-PyPy-γ-HpIm-β-PyIm
	511β)	5'-W	C	G	A	C	G	W-3'	PyIm-β-PyIm-γ-PyIm-β-PyIm
	512β)	5'-W	C	G	A	C	C	W-3'	PyImPyPyPy-γ-ImIm-β-PyIm
	512βp)	5'-W	C	G	A	C	C	W-3'	PyIm-β-PyPy-γ-ImIm-β-PyIm

-		DNA sequence	aromatic amino acid sequence
	513β)	5'-W C G G T T W-3'	РуІтіт-β-Нр-ү-РуРу-β-РуІт
	514β)	·5'-W C G G T A W-3'	РуІмІт-β-Ру-ү-НрРу-β-РуІт
	515β)	5'-W C G G T G W-3'	PyImIm-β-Im-γ-PyPy-β-PyIm
	516β)	5'-W C G G T C W-3'	PyImIm-β-Py-γ-ImPy-β-PyIm
	517β)	5'-W C G G A T W-3'	$PyImIm-\beta-Hp-\gamma-PyHp-\beta-PyIm$
	518 β)	5'-W C G G A A W-3'	$PyImIm-\beta-Py-\gamma-HpHp-\beta-PyIm$
	519β)	5'-W C G G A G W-3'	PyImIm-β-Im-γ-PyHp-β-PyIm
	520 β)	5'-W C G G A C W-3'	PyImIm-β-Py-γ-ImHp-β-PyIm
	521β)	5'-W C G G G T W-3'	${\tt PyImImImHp-\gamma-PyPy-\beta-PyIm}$
	522β)	5'-W C G G G A W-3'	${\tt PyImImImPy-\gamma-HpPy-\beta-PyIm}$
	523β)	5'-W C G G C T W-3'	PyImIm-β-Hp-γ-PyIm-β-PyIm
	524 β)	5'-W C G G C A W-3'	PyImIm-β-Py-γ-HpIm-β-PyIm
	525β)	5'-W C G C T T W-3'	$PyImPyHpHp-\gamma-Py-\beta-ImPyIm$
	525βp)	5'-W C G C T T W-3'	PyImPy- β -Hp- γ -Py- β -ImPyIm
	526 β)	5'-W C G C T A W-3'	РуІтРуНрРу-ү-Нр-β-ІтРуІт
	526βp)	5'-W C G C T A W-3'	$PyImPy-eta-Py-\gamma-Hp-eta-ImPyIm$
	527β)	5'-W C G C T G W-3'	${\tt PyIm}\hbox{-}\beta\hbox{-}{\tt HpIm}\hbox{-}\gamma\hbox{-}{\tt Py}\hbox{-}\beta\hbox{-}{\tt ImPyIm}$
	528β)	5'-W C G C T C W-3'	PyImPyHpPy-γ-Im-β-ImPyIm
	528βp)	5'-W C G C T C W-3'	PyImPy-β-Py-γ-Im-β-ImPyIm
	529β)	5'-W C G C A T W-3'	РуІтРуРуНр-ү-Ру-β-ІтРуІт
	529βp)	5'-W C G C A T W-3'	$PyImPy-\beta-Hp-\gamma-Py-\beta-ImPyIm$
	530β)	5'-W C G C A A W-3'	$PyImPyPyPy-\gamma-Hp-\beta-ImPyIm$
	530βp)	5'-W C G C A A W-3'	PyImPy-β-Py-γ-Hp-β-ImPyIm
	531β)	5'-W C G C A G W-3'	PyIm-β-PyIm-γ-Py-β-ImPyIm
	532β)	5'-W C G C A C W-3'	PyImPyPyPy-y-Im-β-ImPyIm
	532βp)	5'-W C G C A C W-3'	$PyImPy-\beta-Py-\gamma-Im-\beta-ImPyIm$
	533β)	5'-W C G C G T W-3'	PyIm-β-ImHp-γ-Py-β-ImPyIm

	TABLE 61 (co	ont): 10-ring Hairpin Polyamides for rec	ognition of 7-bp 5'-WCGSNNW-3' with β substitutions.
		DNA sequence	aromatic amino acid sequence
	535β)	5'-W C G C C T W-3'	PyImPyPyHp-γ-PyImIm-β-Im
5	536β)	5'-W C G C C A W-3'	${\tt PyImPyPyPy-\gamma-HpImIm-\beta-Im}$
	G33β)	5'-W C G G G G W-3'	PyImImIm-γ-PyPy-β-PyIm
	G34β)	5'-W C G G G C W-3'	PyImImImPy-y-ImPy-β-PyIm
	G35β)	5'-W C G G C G W-3'	PyImIm-β-Im-γ-PyIm-β-PyIm
	G3 6β)	5'-W C G G C C W-3'	PyImIm-β-Py-γ-ImIm-β-PyIm
10	G37β)	5'-W C G C G G W-3'	PyIm-β-ImIm-γ-Py-β-ImPyIm
	G38 β)	5'-W C G C G C W-3'	PyIm-β-ImPy-γ-Im-β-ImPyIm
	G39β)	5'-W C G C C G W-3'	PyIm-β-PyIm-γ-PyImIm-β-Im
	G40 β)	5'-W C G C C C W-3'	PyImPyPyPy-γ-ImImIm-β-Im

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 	DNA sequence	aromatic amino acid sequence
537β)	5'-W C T T T T W-3'	РуНрНрНрнр-γ-РуРу-β-РуІт
537βp)	'5'-W C T T T T W-3'	РуНр-β-НрНр-у-РуРу-β-РуІм
538β)	5'-W C T T T A W-3'	РуНрНрРу-ү-НрРу-β-РуІм
538βp)	5'-W C T T T A W-3'	РуНр-β-НрРу-ү-НрРу-β-РуІм
539β)	5'-W C T T T G W-3'	РуНр- β -НрІm- γ -РуРу- β -РуІm
540β)	5'-W C T T T C W-3'	РуНрНрРру-ү-ІтРу-β-РуІт
540βp)	5'-W C T T T C W-3'	РуНр-β-НрРу-ү-ІтРу-β-РуІт
541β)	5'-W C T T A T W-3'	РуНрНрРуНр- γ -РуНр- β -РуІ $\mathfrak m$
541βp)	5'-W C T T A T W-3'	РуНр-β-РуНр-ү-РуНр-β-РуІт
542 β)	5'-W C T T A A W-3'	РуНрНрРуРу- γ -НрНр- eta -РуІ $\mathfrak m$
542βp)	5'-W C T T A A W-3'	РуНр- β -РуРу- γ -НрНр- β -РуІ $\mathfrak m$
543β)	5'-W C T T A G W-3'	$PyHp-\beta-PyIm-\gamma-PyHp-\beta-PyIm$
544β)	5'-W C T T A C W-3'	РуНрНрРуРу- γ -ІmНр- eta -РуІm
544βp)	5'-W C T T A C W-3'	$PyHp-\beta-PyPy-\gamma-ImHp-\beta-PyIm$
5 45 β)	5'-W C T T G T W-3'	$PyHp-\beta-ImHp-\gamma-PyPy-\beta-PyIm$
546β)	5'-W C T T G A W-3'	$\mathtt{PyHp} \hspace{-0.05cm} - \hspace{-0.05cm} \beta \hspace{-0.05cm} - \hspace{-0.05cm} \mathtt{ImPy} \hspace{-0.05cm} - \hspace{-0.05cm} \gamma \hspace{-0.05cm} - \hspace{-0.05cm} \mathtt{HpPy} \hspace{-0.05cm} - \hspace{-0.05cm} \beta \hspace{-0.05cm} - \hspace{-0.05cm} \mathtt{PyIm}$
547 β)	5'-W C T T G G W-3'	$\mathtt{PyHp}\text{-}\beta\text{-}\mathtt{ImIm}\text{-}\gamma\text{-}\mathtt{PyPy}\text{-}\beta\text{-}\mathtt{PyIm}$
548 β)	5'-W C T T G C W-3'	${\tt PyHp-\beta-ImPy-\gamma-ImPy-\beta-PyIm}$
549 β)	5'-W C T T C T W-3'	РуНрНрРуНр- γ -РуІ \mathfrak{m} - β -РуІ \mathfrak{m}
549βp)	5'-W C T T C T W-3'	РуНр-β-РуНр-γ-РуІm-β-РуІm
550 β)	5'-W C T T C A W-3'	РуНрНрРуРу- γ -НрІm- β -РуІm
550βp)	5'-W C T T C A W-3'	Рунр-β-РуРу-ү-Нріт-β-Руіт
551β)	5'-W C T T C G W-3'	$^{\cdot}$ PyHp- β -PyIm- γ -PyIm- β -PyIm
552β)	5'-W C T T C C W-3'	РунрнрРуРу- γ -ІmІm- β -РуІm
552βp)	5'-W C T T C C W-3'	$\mathtt{PyHp} \hspace{-0.05cm} - \hspace{-0.05cm} \beta \hspace{-0.05cm} - \hspace{-0.05cm} \mathtt{PyPy} \hspace{-0.05cm} - \hspace{-0.05cm} \gamma \hspace{-0.05cm} - \hspace{-0.05cm} \mathtt{ImIm} \hspace{-0.05cm} - \hspace{-0.05cm} \beta \hspace{-0.05cm} - \hspace{-0.05cm} \mathtt{PyIm}$
553β)	5'-W C T A T T W-3'	РуНрРуНрНр-γ-РуРу-β-РуІm
553βp)	5'-W C T A T T W-3'	Рунр- β -нрнр- γ -РуРу- β -РуІм

•	TABLE 62 (co		ion of 7-bp 5'-WCTWNNW-3' with β substitutions.
-		DNA sequence	aromatic amino acid sequence
	554βp)	5'-W C T A T A W-3'	РуНр-β-НрРу-ү-НрРу-β-РуІм
5	555β)	·5'-W C T A T G W-3'	$PyHp-\beta-HpIm-\gamma-PyPy-\beta-PyIm$
	556 β)	5'-W C T A T C W-3'	РуНрРуНрРу-ү-ІмРу-β-РуІм
	556βp)	5'-W C T A T C W-3'	$\verb"PyHp-$\beta-$HpPy-$\gamma-$ImPy-$\beta-$PyIm"$
	557β)	5'-W C T A A T W-3'	РунрРуРунр-ү-Рунр-β-РуІм
	557βp)	5'-W C T A A T W-3'	Рунр- β -Рунр- γ -Рунр- β -Ру
10	558β)	5'-W C T A A A W-3'	РуНрРуРуРу-ү-НрНр-β-РуIm
	558βp)	5'-W C T A A A W-3'	Рунр- β -РуРу- γ -нрнр- β -РуІ \mathfrak{m}
	559β)	5'-W C T A A G W-3'	$\mathtt{PyHp} \text{-}\beta \text{-}\mathtt{PyIm} \text{-}\gamma \text{-}\mathtt{PyHp} \text{-}\beta \text{-}\mathtt{PyIm}$
	560 β)	5'-W C T A A C W-3'	РуНрРуРуРу- γ -ImHp- β -РуІm
	560βp)	5'-W C T A A C W-3'	${\tt PyHp-\beta-PyPy-\gamma-ImHp-\beta-PyIm}$
15	561 β)	5'-W C T A G T W-3'	${\tt PyHp-\beta-ImHp-\gamma-PyPy-\beta-PyIm}$
	562β)	5'-W C T A G A W-3'	${\tt PyHp-\beta-ImPy-\gamma-HpPy-\beta-PyIm}$
	563β)	5'-W C T A G G W-3'	${\tt PyHp-\beta-ImIm-\gamma-PyPy-\beta-PyIm}$
	564β)	5'-W C T A G C W-3'	${\tt PyHp-\beta-ImPy-\gamma-ImPy-\beta-PyIm}$
	565β)	5'-W C T A C T W-3'	Pу H р P у P у H р $-$ ү $ P$ у I т $-$ В $ P$ у I т
20	565β p)	5'-W C T A C T W-3'	$PyHp-\beta-PyHp-\gamma-PyIm-\beta-PyIm$
	566β)	5'-W C T A C A W-3'	РуНрРуРуРу-ү-НрІш-β-РуІш
	566βp)	5'-W C T A C A W-3'	${\tt PyHp-\beta-PyPy-\gamma-HpIm-\beta-PyIm}$
±	567β)	5'-W C T A C G W-3'	PyHp-β-PyIm-γ-PyIm-β-PyIm
	568β)	5'-W C T A C C W-3'	${\tt PyHpPyPyPy-\gamma-ImIm-\beta-PyIm}$
25	568βp)	5'-W C T A C C W-3'	$PyHp-\beta-PyPy-\gamma-ImIm-\beta-PyIm$

· ...

	DNA sequence	ion of 7-bp 5'-WCTSNNW-3' with β substitutions aromatic amino acid sequence
569 β)	5'-W C T G T T W-3'	Py-β-ImHpHp-γ-PyPy-β-PyIm
570β)	5'-W C T G T A W-3'	$Py-\beta-ImHpPy-\gamma-HpPy-\beta-PyIm$
571β)	5'-W C T G T G W-3'	$Py-\beta-ImHpIm-\gamma-PyPy-\beta-PyIm$
572β)	5'-W C T G T C W-3'	$Py-\beta-ImHpPy-\gamma-ImPy-\beta-PyIm$
573β)	5'-W C T G A T W-3'	$Py-\beta-ImPyHp-\gamma-PyHp-\beta-PyIm$
574β)	5'-W C T G A A W-3'	$Py-\beta-ImPyPy-\gamma-HpHp-\beta-PyIm$
575β)	5'-W C T G A G W-3'	$Py-\beta-ImPyIm-\gamma-PyHp-\beta-PyIm$
576β)	5'-W C T G A C W-3'	$Py-\beta-ImPyPy-\gamma-ImHp-\beta-PyIm$
577β)	5'-W C T G G T W-3'	$Py-\beta-ImImHp-\gamma-PyPy-\beta-PyIm$
578β)	5'-W C T G G A W-3'	$Py-\beta-ImImPy-\gamma-HpPy-\beta-PyIm$
579β)	5'-W C T G C T W-3'	$Py-\beta-ImPyHp-\gamma-PyIm-\beta-PyIm$
5 80 β)	5'-W C T G C A W-3'	$Py-\beta-ImPyPy-\gamma-HpIm-\beta-PyIm$
5 81 β)	5'-W C T G G G W-3'	Py-β-ImImIm-γ-PyPy-β-PyIm
582β)	5'-W C T G G C W-3'	Py-β-ImImPy-γ-ImPy-β-PyIm
583β)	5'-W C T G C G W-3'	Py-β-ImPyIm-γ-PyIm-β-PyIm
584β)	5'-W C T G C C W-3'	Py-β-ImPyPy-γ-ImIm-β-PyIm
5 85 β)	5'-W C T C T T W-3'	$PyHpPyHpHp-\gamma-Py-\beta-ImPyIm$
5 85 βp)	5'-W C T C T T W-3'	РунрРу-β-нр-ү-Ру-β-ітРуіт
586β)	5'-W C T C T A W-3'	$PyHpPyHpPy-\gamma-Hp-\beta-ImPyIm$
586βp)	5'-W C T C T A W-3'	РунрРу-β-Ру-ү-нр-β-ІтРуІт
587β)	5'-W C T C T G W-3'	PyHp- β -HpIm- γ -Py- β -ImPyIm
588β)	5'-W C T C T C W-3'	$PyHpPyHpPy-\gamma-Im-\beta-ImPyIm$
588βp)	5'-W C T C T C W-3'	PyHpPy- β -Py- γ -Im- β -ImPyIm
589β)	5'-W C T C A T W-3'	РуНрРуРуНр-ү-Ру-β-ІтРуІт
589βp)	5'-W C T C A T W-3'	РунрРу-β-Нр-ү-Ру-β-ІтРуІт
590β)	5'-W C T C A A W-3'	РуНрРуРуРу-ү-Нр-β-ІmРуІm
590βp)	5'-W C T C A A W-3'	РунрРу-β-Ру-ү-нр-β-ітРуіт
591β)	5'-W C T C A G W-3'	РуНр-β-РуІт-ү-Ру-β-ІтРуІт

_	TABLE 63 (co	ont): 10-ring Hairpin Polyamides	for recognition of 7-bp 5'-WCTSNNW-3' with β substitutions.
=		DNA sequence	aromatic amino acid sequence
	592β)	5'-W C T C A C W-3'	РуНрРуРуРу-ү-Іш-β-ІшРуІш
	592βp)	5'-W C T C A C W-3'	$PyHpPy-\beta-Py-\gamma-Im-\beta-ImPyIm$
5	593β) ·	5'-W C T C G T W-3'	$PyHp-\beta-ImHp-\gamma-Py-\beta-ImPyIm$
	594β)	5'-W C T C G A W-3'	${\tt PyHp-\beta-ImPy-\gamma-Hp-\beta-ImPyIm}$
	595β)	5'-W C T C C T W-3'	РуНрРуРуНр- γ -РуІмІм- β -Ім
	595βp)	5'-W C T C C T W-3'	${\tt Py-\beta-PyPyHp-\gamma-PyImIm-\beta-Im}$
	596β)	5'-W C T C C A W-3'	PyHpPyPyPy-y-HpImIm-β-Im
10	596βp)	5'-W C T C C A W-3'	$Py-\beta-PyPyPy-\gamma-HpImIm-\beta-Im$
	597β)	5'-W C T C G G W-3'	$PyHp-\beta-ImIm-\gamma-Py-\beta-ImPyIm$
	598β)	5'-W C T C G C W-3'	${\tt PyHp-\beta-ImPy-\gamma-Im-\beta-ImPyIm}$
	599β)	5'-W C T C C G W-3'	$\mathtt{PyHp} \hspace{-0.5mm}-\hspace{-0.5mm} \beta \hspace{-0.5mm}-\hspace{-0.5mm} \mathtt{PyIm} \hspace{-0.5mm}-\hspace{-0.5mm} \gamma \hspace{-0.5mm}-\hspace{-0.5mm} \mathtt{PyImIm} \hspace{-0.5mm}-\hspace{-0.5mm} \beta \hspace{-0.5mm}-\hspace{-0.5mm} \mathtt{Im}$
	600β)	5'-W C T C C C W-3'	РуНрРуРуРу- γ -ImImIm- eta -Im
15	600βp)	5'-W C T C C C W-3'	Py- β -PyPyPy- γ -ImImIm- β -Im

		aromatic amino acid sequence
601ß)	5'-W C A T T T W-3'	РуРуНрНрНр-γ-РуРу-β-НрIm
601βp)	'5'-W C A T T T W-3'	РуРу-β-НрНр-ү-РуРу-β-НрІт
602β)	5'-W C A T T A W-3'	РуРуНрНрРу-ү-НрРу-β-НрІм
602βp)	5'-W C A T T A W-3'	РуРу-β-НрРу-ү-НрРу-β-НрІм
603 β)	5'-W C A T T G W-3'	РуРу-β-НрІт-ү-РуРу-β-НрІт
604β)	5'-W C A T T C W-3'	РуРуНрНрРу-ү-ІмРу-β-НрІм
604βp)	5'-W C A T T C W-3'	$PyPy-\beta-HpPy-\gamma-ImPy-\beta-HpIm$
605β)	5'-W C A T A T W-3'	РуРуНрРуНр-ү-РуНр-β-НрІт
605βp)	5'-W C A T A T W-3'	РуРу- β -РуНр- γ -РуНр- β -НрІ $\mathfrak m$
606 β)	5'-W C A T A A W-3'	РуРуНрРуРу-ү-НрНр-β-НрІм
606βp)	5'-W C A T A A W-3'	РуРу- β -РуРу- γ -НрНр- β -НрІm
607β)	5'-W C A T A G W-3'	РуРу-β-РуІт-ү-РуНр-β-НрІт
608β)	5'-W C A T A C W-3'	РуРуНрРуРу-у-ІmНр-β-НрІm
608βp)	5'-W C A T A C W-3'	РуРу- β -РуРу- γ -ІmНр- β -НрІm
609β)	5'-W C A T G T W-3'	${\tt PyPy-\beta-ImHp-\gamma-PyPy-\beta-HpIm}$
610 β)	5'-W C A T G A W-3'	РуРу-β-ІтРу-ү-НрРу-β-НрІт
611 β)	5'-W C A T G G W-3'	${\tt PyPy-\beta-ImIm-\gamma-PyPy-\beta-HpIm}$
612 β)	5'-W C A T G C W-3'	PyPy-β-ImPy-γ-ImPy-β-HpIm
613 β)	5'-W C A T C T W-3'	РуРуНрРуНр- γ -РуІ \mathfrak{m} - β -НрІ \mathfrak{m}
613βp)	5'-W C A T C T W-3'	РуРу-β-РуНр-ү-РуІт-β-НрІт
614 β)	5'-W C A T C A W-3'	$PyPyHpPyPy-\gamma-HpIm-\beta-HpIm$
614βp)	5'-W C A T C A W-3'	${\tt PyPy-\beta-PyPy-\gamma-HpIm-\beta-HpIm}$
615 β)	5'-W C A T C G W-3'	${}^{\cdot} \mathtt{PyPy-}\beta\mathtt{-PyIm-}\gamma\mathtt{-PyIm-}\beta\mathtt{-HpIm}$
616 β)	5'-W C A T C C W-3'	${\tt PyPyHpPyPy-\gamma-ImIm-\beta-HpIm}$
616βp)	5'-W C A T C C W-3'	${\tt PyPy-\beta-PyPy-\gamma-ImIm-\beta-HpIm}$
617 β)	5'-W C A A T T W-3'	РуРуРуНрНр-ү-РуРу-β-НрІт
-	5'-W C A A T T W-3'	$PyPy-\beta-HpHp-\gamma-PyPy-\beta-HpIm$
618 β)	5'-W C A A T A W-3'	РуРуРуНрРу-ү-НрРу-β-НрІш

•	TABLE 64 (con	nt): 10-ring Hairpin Polyamides	for recognition of 7-bp 5'-WCAWNNW-3' with β substitutions.
:		DNA sequence	aromatic amino acid sequence
	619 β)	5'-W C A A T G W-3'	$PyPy-\beta-HpIm-\gamma-PyPy-\beta-HpIm$
	620 β)	5'-W C A A T C W-3'	${\tt PyPyPyHpPy-\gamma-ImPy-\beta-HpIm}$
5	620βp)	·5'-W C A A T C W-3'	${\tt PyPy-}\beta{\tt -HpPy-}\gamma{\tt -ImPy-}\beta{\tt -HpIm}$
	621 β)	5'-W C A A A T W-3'	$PyPyPyPyHp-\gamma-PyHp-\beta-HpIm$
	621 β p)	5'-W C A A A T W-3'	РуРу-β-РуНр-ү-РуНр-β-НрІм
	622 β)	5'-W C A A A A W-3'	РуРуРуРуРу-ү-НрНр-β-НрІм
	622βp)	5'-W C A A A A W-3'	${\tt PyPy-}\beta\hbox{-}{\tt PyPy-}\gamma\hbox{-}{\tt HpHp-}\beta\hbox{-}{\tt HpIm}$
10	623β)	5'-W C A A A G W-3'	${\tt PyPy-}\beta{\tt -PyIm-}\gamma{\tt -PyHp-}\beta{\tt -HpIm}$
	624 β)	5'-W C A A A C W-3'	${\tt PyPyPyPyPy-\gamma-ImHp-\beta-HpIm}$
	624βp)	5'-W C A A A C W-3'	PyPy- β -PyPy- γ -ImHp- β -HpIm
	625 β)	5'-W C A A G T W-3'	${\tt PyPy-}\beta{\tt -ImHp-}\gamma{\tt -PyPy-}\beta{\tt -HpIm}$
	626 β)	5'-W C A A G A W-3'	${\tt PyPy-}\beta\hbox{-}{\tt ImPy-}\gamma\hbox{-}{\tt HpPy-}\beta\hbox{-}{\tt HpIm}$
15	627β)	5'-W C A A G G W-3'	PyPy- β -ImIm- γ -PyPy- β -HpIm
	628ß)	5'-W C A A G C W-3'	${\tt PyPy-\beta-ImPy-\gamma-ImPy-\beta-HpIm}$
	629β)	5'-W C A A C T W-3'	РуРуРуРуНр-ү-РуІт-β-НрІт
	629βp)	5'-W C A A C T W-3'	РуРу- β -РуНр- γ -РуІm- β -НрІm
	630β)	5'-W C A A C A W-3'	РуРуРуРуРу-ү-НрІт-β-НрІт
20	630βp)	-51-W C A A C A W-31	PyPy- β -PyPy- γ -HpIm- β -HpIm
	631β)	5'-W C A A C G W-3'	PyPy-β-PyIm-γ-PyIm-β-HpIm
	632 β)	5'-W C A A C C W-3	РуРуРуРуРу-ү-Ітіт-β-Нріт
	632βp)	5'-W C A A C C W-3	PyPy- β -PyPy- γ -ImIm- β -HpIm

_	-	DNA sequ	ieno	e				aromatic amino acid sequence
	633β)	5'-W C	A	G	T	T	W-3'	Ру-β-ІтНрНр-ү-РуРу-β-НрІт
	634β)	5'-W C	A	G	T	A	M-3;	${\tt Py-\beta-ImHpPy-\gamma-HpPy-\beta-HpIm}$
	635β)	5'-W C	A	G	T	G	W-3'	${\tt Py-\beta-ImHpIm-\gamma-PyPy-\beta-HpIm}$
	636 β)	5'-W C	A	G	T	C	W-3'	${\tt Py-\beta-ImHpPy-\gamma-ImPy-\beta-HpIm}$
	637β)	5'-W C	A	G	A	T	W-3'	Ру-β-ІтРуНр-ү-РуНр-β-НрІт
	638ß)	5'-W C	A	G	A	A	W-3'	$Py-\beta-ImPyPy-\gamma-HpHp-\beta-HpIm$
	639β)	5'-W C	A	G	A	G	W-3'	${\tt Py-\beta-ImPyIm-\gamma-PyHp-\beta-HpIm}$
	640 β)	5'-W C	A	G	A	С	W-3'	${\tt Py-\beta-ImPyPy-\gamma-ImHp-\beta-HpIm}$
	641ß)	5'-W C	A	G	G	T	W-3'	$Py-\beta-ImImHp-\gamma-PyPy-\beta-HpIm$
	642 β)	5'-W C	A	G	G	A	W-3'	${\tt Py-\beta-ImImPy-\gamma-HpPy-\beta-HpIm}$
	643β)	5'-W C	A	G	C	T	W-3'	${\tt Py-\beta-ImPyHp-\gamma-PyIm-\beta-HpIm}$
	64 4 β)	5'-W C	A	G	C	A	W-3'	${\tt Py-\beta-ImPyPy-\gamma-HpIm-\beta-HpIm}$
	645β)	5'-W C	A	G	G	G	M-3'	${\tt Py-\beta-ImImIm-\gamma-PyPy-\beta-HpIm}$
	64 6 β)	5'-W C	A	G	G	C	W-3'	${\tt Py-\beta-ImImPy-\gamma-ImPy-\beta-HpIm}$
	647β)	5'-W C	A	G	C	G	W-3'	${\tt Py-\beta-ImPyIm-\gamma-PyIm-\beta-HpIm}$
	648B)	5'-W C	A	G	C	C	W-3'	$Py-\beta-ImPyPy-\gamma-ImIm-\beta-HpIm$
	649B)	5'-W C	Α	C	T	T	W-3'	РуРуРуНрНр- γ -Ру- β -ІmНрІm
	649βp)	5'-W C	A	C	T	T	W-3'	${\tt PyPyPy-\beta-Hp-\gamma-Py-\beta-ImHpIm}$
	650β)	5'-W C	A	C	T	A	W-3'	РуРуРуНрРу- γ -Нр- β -ІmНрІm
	650βp)	5'-W C	A	C	T	A	W-3'	${\tt PyPyPy-\beta-Py-\gamma-Hp-\beta-ImHpIm}$
	651 β)	5'-W C	A	C	T	G	W-3'	${\tt PyPy-\beta-HpIm-\gamma-Py-\beta-ImHpIm}$
	652β)	5'-W C	A	C	T	C	W-3'	${\tt PyPyPyHpPy-\gamma-Im-\beta-ImHpIm}$
	652βp)	5'-W C	A	C	T	C	W-3'	$\ ^{\cdot} \mathtt{PyPyPy} \text{-}\beta \text{-}\mathtt{Py} \text{-}\gamma \text{-}\mathtt{Im} \text{-}\beta \text{-}\mathtt{Im}\mathtt{HpIm}$
	653β)	5'-W C	A	C	A	T	W-3'	РуРуРуРуНр- γ -Ру- β -ІmНрІm
	653βp)	5'-W C	: A	C	A	T	W-3'	${\tt PyPyPy-\beta-Hp-\gamma-Py-\beta-ImHpIm}$
	654β)	5'-W C	: A	C	A	A	W-3 '	PyPyPyPyPy- γ -Hp- β -ImHpIm
	654βp)	5'-W C	: A	C	A	A	W-3'	${\tt PyPyPy-\beta-Py-\gamma-Hp-\beta-ImHpIm}$
	655β)	5'-W C	: A	C	A	G	W-3'	${\tt PyPy-\beta-PyIm-\gamma-Py-\beta-ImHpIm}$

_	TABLE 65 (co	ont): 10-ring Hairpin Polyamides for rec	cognition of 7-bp 5'-WCASNNW-3' with β substitutions.
		DNA sequence	aromatic amino acid sequence
	656β)	5'-W C A C A C W-3'	${\tt PyPyPyPyPy-\gamma-Im-\beta-ImHpIm}$
	656βp)	5'-W C A C A C W-3'	PyPyPy- β -Py- γ -Im- β -ImHpIm
5	657β)	-5'-W C A C G T W-3'	$PyPy-\beta-I$ mHp- $\gamma-Py-\beta-I$ mHpIm
	658βp)	5'-W C A C G A W-3'	PyPy- β -ImPy- γ -Hp- β -ImHpIm
	659β)	5'-W C A C C T W-3'	${\tt PyPyPyPyHp-\gamma-PyImIm-\beta-Im}$
	659βp)	5'-W C A C C T W-3'	${\tt Py-\beta-PyPyHp-\gamma-PyImIm-\beta-Im}$
	660β)	5'-W C A C C A W-3'	${\tt PyPyPyPyPy-\gamma-HpImIm-\beta-Im}$
10	660βp)	5'-W C A C C A W-3'	$Py-eta-PyPyPy-\gamma-HpImIm-eta-Im$
	661 β)	5'-W C A C G G W-3'	PyPy- β -ImIm- γ -Py- β -ImHpIm
	662β)	5'-W C A C G C W-3'	PyPy- β -ImPy- γ -Im- β -ImHpIm
	663β)	5'-W C A C C G W-3'	PyPy-β-PyIm-γ-PyImIm-β-Im
	664B)	5'-W C A C C C W-3'	PyPyPyPyPy-γ-ImImIm-β-Im
15	664βp)	5'-W C A C C C W-3'	${\tt Py-\beta-PyPyPy-\gamma-ImImIm-\beta-Im}$

_		DNA sequence	ion of 7-bp 5'-WCCWNNW-3' with β substitution aromatic amino acid sequence
	665β)	5'-W C C T T T W-3'	РуРуНрНрНр-ү-РуРу-β-ІмІм
	665βp)	'5'-W C C T T T W-3'	$PyPy-\beta-HpHp-\gamma-PyPy-\beta-ImIm$
	666β)	5'-W C C T T A W-3'	РуРуНрНрРу-ү-НрРу-β-ІтІт
	666βp)	5'-W C C T T A W-3'	РуРу- β -НрРу- γ -НрРу- β -ІmІm
	667B)	5'-W C C T T G W-3'	$PyPy-\beta-HpIm-\gamma-PyPy-\beta-ImIm$
	668β)	5'-W C C T T C W-3'	РуРуНрНрРу- γ -ІmРу- β -ІmІm
	668βp)	5'-W C C T T C W-3'	${\tt PyPy-\beta-HpPy-\gamma-ImPy-\beta-ImIm}$
	669β)	5'-W C C T A T W-3'	РуРуНрРуНр- γ -РуНр- eta -ІmІm
	669βp)	5'-W C C T A T W-3'	${\tt PyPy-\beta-PyHp-\gamma-PyHp-\beta-ImIm}$
	670β)	5'-W C C T A A W-3'	РуРуНрРуРу- γ -НрНр- β -ІmІm
	670βp)	5'-W C C T A A W-3'	$PyPy-\beta-PyPy-\gamma-HpHp-\beta-ImIm$
	671β)	5'-W C C T A G W-3'	${\tt PyPy-\beta-PyIm-\gamma-PyHp-\beta-ImIm}$
	672 β)	5'-W C C T A C W-3'	PyPyHpPyPy- γ -ImHp- β -ImIm
	672βp)	5'-W C C T A C W-3'	${\tt PyPy-\beta-PyPy-\gamma-ImHp-\beta-ImIm}$
	673 β)	5'-W C C T G T W-3'	${\tt PyPy-\beta-ImHp-\gamma-PyPy-\beta-ImIm}$
	67 4 β)	5'-W C C T G A W-3'	PyPy- eta -ImPy- γ -HpPy- eta -ImIm
	675 β)	5'-W C C T G G W-3'	PyPy-β-ImIm-γ-PyPy-β-ImIm
	6 76 β)	5'-W C C T G C W-3'	PyPy-β-ImPy-γ-ImPy-β-ImIm
	677 β)	5'-W C C T C T W-3'	РуРуНрРуНр-ү-РуІт-β-ІтІт
	677βp)	5'-W C C T C T W-3'	PyPy- eta -PyHp- γ -PyIm- eta -ImIm
	67 8 β)	5'-W C C T C A W-3'	РуРуНрРуРу-ү-НрІм-β-ІмІм
	678βp)	5'-W C C T C A W-3'	PyPy- eta -PyPy- γ -HpIm- eta -ImIm
	679β)	5'-W C C T C G W-3'	PyPy-β-PyIm-γ-PyIm-β-ImIm
	6 80 β)	5'-W C C T C C W-3'	ΡγΡγΗρΡγΡγ-γ-ImIm-β-ImIm
	680βp)	5'-W C C T C C W-3'	PyPy- β -PyPy- γ -ImIm- β -ImIm
	681 β)	5'-W C C A T T W-3'	РуРуРуНрНр-ү-РуРу-β-ІтІт
	681βp)	5'-W C C A T T W-3'	РуРу-β-НрНр-ү-РуРу-β-ІтІт
	682 β)	5'-W C C A T A W-3'	РуРуРуНрРу-ү-НрРу-β-ІтІт
	682βp)	5'-W C C A T A W-3'	$PyPy-\beta-HpPy-\gamma-HpPy-\beta-ImIm$

	DNA sequence		aromatic amino acid sequence
683β)	5'-W C C	A T G W-3'	${\tt PyPy-\beta-HpIm-\gamma-PyPy-\beta-ImIm}$
684B)	5'-W C C	A T C W-3'	РуРуРуНрРу-ү-ІмРу-β-ІмІм
684βp)	5'-W C C	A T C W-3'	PyPy-β-HpPy-γ-ImPy-β-ImIm
685β)	5'-W C C	A A T W-3'	РуРуРуРуНр-γ-РуНр-β-ImIm
685βp)	5'-W C C	A A T W-3'	РуРу-β-РуНр-ү-РуНр-β-ІтІт
686β)	5'-W C C	A A A W-3'	РуРуРуРуРу-ү-НрНр-β-ІмІт
686βp)	5'-W C C	A A A W-3'	PyPy- β -PyPy- γ -HpHp- β -ImIm
687β)	5'-W C C	A A G W-3'	PyPy-β-PyIm-γ-PyHp-β-ImIm
688β)	5'-W C C	A A C W-3'	РуРуРуРуРу-ү-ІmНр-β-ІmІm
688βp)	5'-W C C	A A C W-3'	$PyPy-\beta-PyPy-\gamma-ImHp-\beta-ImIm$
689β)	5'-W C C	A G T W-3'	$PyPy-\beta-ImHp-\gamma-PyPy-\beta-ImIm$
690 β)	5'-W C C	A G A W-3'	$PyPy-\beta-ImPy-\gamma-HpPy-\beta-ImIm$
691 β)	5'-W C C	A G G W-3'	$\mathtt{PyPy-}\beta\mathtt{-ImIm-}\gamma\mathtt{-PyPy-}\beta\mathtt{-ImIm}$
692ß)	5'-W C C	A G C W-3'	PyPy-β-ImPy-γ-ImPy-β-ImIm
693ß)	5'-W C C	A C T W-3'	PyPyPyPyHp-γ-PyIm-β-ImIm
693βp)	5'-W C C	A C T W-3'	$PyPy-\beta-PyHp-\gamma-PyIm-\beta-ImIm$
69 4 β)	5'-W C C	A C A W-3'	${\tt PyPyPyPyPy-\gamma-HpIm-\beta-ImIm}$
694βp)	5'-W C C	A C A W-3'	$PyPy-\beta-PyPy-\gamma-HpIm-\beta-ImIm$
6 95 β)	5'-W C C	A C G W-3'	PyPy-β-PyIm-γ-PyIm-β-ImIm
696 β)	5'-W C C	A C C W-3'	PyPyPyPyPy-γ-ImIm-β-ImIm
696βp)	5'-W C C	A C C W-3'	PyPy-β-PyPy-γ-ImIm-β-ImIm

_	TABLE 67	: 10-ring Hairpin Polyamides for recognition DNA sequence	of 7-bp 5'-WCCSNNW-3' with β substitutions.
		•	aromatic amino acid sequence
	697β)	5'-W C C G T T W-3'	$Py-\beta-ImHpHp-\gamma-PyPy-\beta-ImIm$
	698β)	'5'-W C C G T A W-3'	$Py-\beta-ImHpPy-\gamma-HpPy-\beta-ImIm$
	699β)	5'-W C C G T G W-3'	$Py-\beta-ImHpIm-\gamma-PyPy-\beta-ImIm$
	700β)	5'-W C C G T C W-3'	$Py-\beta-ImHpPy-\gamma-ImPy-\beta-ImIm$
	701β)	5'-W C C G A T W-3'	${\tt Py-\beta-ImPyHp-\gamma-PyHp-\beta-ImIm}$
	702β)	5'-W C C G A A W-3'	${\tt Py-\beta-ImPyPy-\gamma-HpHp-\beta-ImIm}$
	703β)	5'-W C C G A G W-3'	$Py-\beta-ImPyIm-\gamma-PyHp-\beta-ImIm$
	704β)	5'-W C C G A C W-3'	$Py-\beta-ImPyPy-\gamma-ImHp-\beta-ImIm$
	705β)	5'-W C C G G T W-3'	$Py-\beta-ImImHp-\gamma-PyPy-\beta-ImIm$
	706β)	5'-W C C G G A W-3'	$Py-\beta-ImImPy-\gamma-HpPy-\beta-ImIm$
	707β)	5'-W C C G C T W-3'	$Py-\beta-ImPyHp-\gamma-PyIm-\beta-ImIm$
	708β)	5'-W C C G C A W-3'	$Py-\beta-ImPyPy-\gamma-HpIm-\beta-ImIm$
	709β)	5'-W C C C T T W-3'	РуРуРуНрНр-ү-Ру-β-ІмІмІм
	709βp)	5'-W C C C T T W-3'	${\tt PyPyPy-\beta-Hp-\gamma-Py-\beta-ImImIm}$
	710β)	5'-W C C C T A W-3'	РуРуРуНрРу- γ -Нр- β -ІmІmІm
	710βp)	5'-W C C C T A W-3'	PyPyPy- β -Py- γ -Hp- β -ImImIm
	711β)	5'-W C C C T G W-3'	PyPy-β-HpIm-γ-Py-β-ImImIm
	712β)	5'-W C C C T C W-3'	PyPyPyHpPy-γ-Im-β-ImImIm
	712βp)	5'-W C C C T C W-3'	PyPyPy-β-Py-γ-Im-β-ImImIm
	713β)	5'-W C C C A T W-3'	РуРуРуРуНр-ү-Ру-β-ІтІПТ
	713βp)	5'-W C C C A T W-3'	$PyPyPy-\beta-Hp-\gamma-Py-\beta-ImImIm$
	714β)	5'-W C C C A A W-3'	РуРуРуРуРу-ү-Нр-β-ІмІмІм
	714βp)	5'-W C C C A A W-3'	РуРуРу-β-Ру-ү-Нр-β-ІмІт
	715β)	5'-W C C C A G W-3'	PyPy-β-PyIm-γ-Py-β-ImImIm
	716 β)	5'-W C C C A C W-3'	PyPyPyPy-γ-Im-β-ImImIm
	716βp)	5'-W C C C A C W-3'	PyPyPy-β-Py-γ-Im-β-ImImIm
	717β)	5'-W C C C G T W-3'	PyPy-β-ImHp-γ-Py-β-ImImIm
	718β)	5'-W C C C G A W-3'	PyPy-β-ImPy-γ-Hp-β-ImImIm

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	DNA sequençe	aromatic amino acid sequence
G41 β)	5'-W C C G G G W-3'	${\tt Py-}\beta{\tt -Imimim-}\gamma{\tt -PyPy-}\beta{\tt -Imim}$
G42β)	5'-W C C G G C W-3'	${\tt Py-\beta-ImImPy-\gamma-ImPy-\beta-ImIm}$
G43 β)	'5'-W C C G C G W-3'	Py-β-ImPyIm-γ-PyIm-β-ImIm
G44β)	5'-W C C G C C W-3'	Py-β-ImPyPy-γ-ImIm-β-ImIm
G45β)	5'-W C C C G G W-3'	PyPy-β-ImIm-γ-Py-β-ImImIm
G46β)	5'-W C C C G C W-3'	PyPy-β-ImPy-γ-Im-β-ImImIm
G47β)	5'-W C C C C G W-3'	PyPy-β-PyIm-γ-PyImImImIm

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-	TABLE 68		n of 7-bp 5'-WAGWNNW-3' with β substitutions.
=		DNA sequence	aromatic amino acid sequence
	723β)	5'-W A G T T G W-3'	$PyIm-\beta-HpIm-\gamma-РуРуРуРуНр$
5	723βp)	'5'-W A G T T G W-3'	$PyIm-\beta-HpIm-\gamma-PyPy-\beta-PyHp$
	727 β)	5'-W A G T A G W-3'	РуІт-β-РуІт-γ-РуНрРуРуНр
	727βp)	5'-W A G T A G W-3'	РуІт-β-РуІт-ү-РуНр-β-РуНр
	729 β)	5'-W A G T G T W-3'	РуІм-β-ІπНр-γ-РуРуРуРуНр
	729βp)	5'-W A G T G T W-3'	РуІт-β-ІтНр-ү-РуРу-β-РуНр
10	730 β)	5'-W A G T G A W-3'	РуІт-β-ІтРу-ү-НрРуРуРуНр
	730βp)	5'-W A G T G A W-3'	РуІт-β-ІтРу-ү-НрРу-β-РуНр
	731β)	5'-W A G T G G W-3'	РуІт-β-Ітіт-ү-РуРуРуРуРу
	731βp)	5'-W A G T G G W-3'	$PyIm-\beta-ImIm-\gamma-PyPy-\beta-PyHp$
	732β)	5'-W A G T G C W-3'	РуІт-β-ІтРу-ү-ІтРуРуРуНр
15	732βp)	5'-W A G T G C W-3'	PyIm-β-ImPy-γ-ImPy-β-PyHp
	735β)	5'-W A G T C G W-3'	РуІт-β-РуІт-ү-РуІтРуРуНр
	735βp)	5'-W A G T C G W-3'	PyIm-β-PyIm-γ-PyIm-β-PyHp
	739ß)	5'-W A G A T G W-3'	РуІm-β-НрІm-γ-РуРуНрРуНр
	739βp)	5'-W A G A T G W-3'	РуІт-β-НрІт-ү-РуРу-β-РуНр
20	743β)	5'-W A G A A G W-3'	РуІт-β-РуІт-ү-РуНрНрРуНр
	743βp)	5'-W A G A A G W-3'	РуІт-β-РуІт-ү-РуНр-β-РуНр
	745β)	5'-W A G A G T W-3'	РуІт-β-Ітнр-ү-РуРуНрРуНр
	745βp)	5'-W A G A G T W-3'	РуІт-β-Ітнр-ү-РуРу-β-Рунр
	746β)	5'-W A G A G A W-3'	РуІт-β-ІтРу-ү-НрРуНрРуНр
25	746βp)	5'-W A G A G A W-3'	РуІм-β-ІmРу-ү-НрРу-β-РуНр
	747β)	5'-W A G A G G W-3'	[.] РуІт-β-Ітіт-ү-РуРуНрРуНр
	7 47 β p)	5'-W A G A G G W-3'	$PyIm-\beta-ImIm-\gamma-PyPy-\beta-PyHp$
	748β)	5'-W A G A G C W-3'	РуІт-β-ІтРу-ү-ІтРуНрРуНр
	748βp)	5'-W A G A G C W-3'	PyIm-β-ImPy-γ-ImPy-β-PyHp
30	751β)	5'-W A G A C G W-3'	РуІт-β-РуІт-ү-РуІтнрРунр
	75 1 βp)	5'-W A G A C G W-3'	РуІт-β-РуІт-ү-РуІт-β-РуНр

	DNA sequence	aromatic amino acid sequence
753 β)	5'-W A G G T T W-3'	$PyImIm-eta-Hp-\gamma-PyPyPyPyHp$
753βp) ·5'-W A G G T T W-3'	РуІтіт-β-Нр-ү-Ру-β-РуРуНр
754 β)	5'-W A G G T A W-3'	${\tt PyImIm-}\beta\hbox{-}{\tt Py-}\gamma\hbox{-}{\tt HpPyPyPyHp}$
754βp) 5'-W A G G T A W-3'	РуІтіт-β-Ру-ү-Нр-β-РуРуНр
755β)	5'-W A G G T G W-3'	РуІтіт-β-Іт-ү-РуРуРуРуНр
755βp) 5'-W A G G T G W-3'	РуІтіт-β-іт-ү-Ру-β-РуРуНр
756β)	5'-W A G G T C W-3'	РуІтіт-β-Ру-γ-ІтРуРуРуНр
756ßp) 5'-W A G G T C W-3'	РуІтіт-β-Ру-ү-Іт-β-РуРуНр
757β)	5'-W A G G A T W-3'	РуІтіт-β-Нр-γ-РуНрРуРуНр
757βp) 5'-W A G G A T W-3'	РуІтіт- eta -Нр- γ -Ру- eta -РуРуНр
758β)	5'-W A G G A A W-3'	РуІтіт- β -Ру- γ -НрНрРуРуНр
758βp) 5'-W A G G A A W-3'	P у I m I m $-\beta$ - P у $-\gamma$ - H р $-\beta$ - P у P у H р
759 β)	5'-W A G G A G W-3'	$PyImIm-\beta-Im-\gamma-PyHpPyPyHp$
759βp) 5'-W A G G A G W-3'	PyImIm- β -Im- γ -Py- β -PyPyHp
760β)	5'-W A G G A C W-3'	$ exttt{PyImIm-}eta exttt{-Py-}\gamma exttt{-ImHpPyPyHp}$
760βp) 5'-W A G G A C W-3'	PyImIm- β -Py- γ -Im- β -PyPyHp
763β)	5'-W A G G C T W-3'	$\mathtt{PyImIm}\text{-}\beta\text{-}\mathtt{Hp}\text{-}\gamma\text{-}\mathtt{PyImPyPyHp}$
764β)	5'-W A G G C A W-3'	$PyImIm-eta-Py-\gamma-HpImPyPyHp$
765 β)	5'-W A G C T T W-3'	$PyImPyHpHp-\gamma-Py-\beta-ImPyHp$
765βp) 5'-W A G C T T W-3'	$PyImPy-\beta-Hp-\gamma-Py-\beta-ImPyHp$
766β)	5'-W A G C T A W-3'	$PyImPyHpPy-\gamma-Hp-\beta-ImPyHp$
766βp) 5'-W A G C T A W-3'	$PyImPy-\beta-Py-\gamma-Hp-\beta-ImPyHp$
767β)	5'-W A G C T G W-3'	$PyIm-\beta-HpIm-\gamma-Py-\beta-ImPyHp$
768β)	5'-W A G C T C W-3'	РуІмРуНрРу-ү-Ім-β-ІмРуНр
768βp) 5'-W A G C T C W-3'	PyImPy- β -Py- γ -Im- β -ImPyHp
7 69 β)	5'-W A G C A T W-3'	РуІтРуРуНр-ү-Ру-β-ІтРуНр
769βp) 5'-W A G C A T W-3'	PyImPy- β -Hp- γ -Py- β -ImPyHp

-	TABLE 69 (co	ont): 10-ring Hairpin Polyamides for re-	cognition of 7-bp 5'-WAGSNNW-3' with β substitutions.
=		DNA sequence	aromatic amino acid sequence
	770βp)	5'-W A G C A A W-3'	РуІтРу-β-Ру-ү-Нр-β-ІтРуНр
5	771β)	5'-W A G C A G W-3'	$PyIm-\beta-PyIm-\gamma-Py-\beta-ImPyHp$
	772β)	5'-W A G C A C W-3'	РуІтРуРуРу-ү-Іт-β-ІтРуНр
	772βp)	5'-W A G C A C W-3'	$PyImPy-\beta-Py-\gamma-Im-\beta-ImPyHp$
	773β)	5'-W A G C G T W-3'	$PyIm-eta-ImHp-\gamma-Py-eta-ImPyHp$
	77 4 β)	5'-W A G C G A W-3'	РуІт- β -ІтРу- γ -Нр- β -ІтРуНр
10	775β)	5'-W A G C C T W-3'	${\tt PyImPyPyHp-\gamma-PyImIm-\beta-Hp}$
	776B)	5'-W A G C C A W-3'	${\tt PyImPyPyPy-\gamma-HpImIm-\beta-Hp}$
	779β)	5'-W A G G C G W-3'	$PyImIm-\beta-Im-\gamma-PyImPyPyHp$
	780β)	5'-W A G G C C W-3'	PyImIm-β-Py-γ-ImImPyPyHp
	781β)	5'-W A G C G G W-3'	${\tt PyIm-\beta-ImIm-\gamma-Py-\beta-ImPyHp}$
15	782β)	5'-W A G C G C W-3'	$PyIm-eta-ImPy-\gamma-Im-eta-ImPyHp$
	783β)	5'-W A G C C G W-3'	$PyIm-\beta-PyIm-\gamma-PyImIm-\beta-Hp$
	784β)	5'-W A G C C C W-3'	PyImPyPyPy-γ-ImImIm-β-Hp

	DNA sequ	ienc	е				aromatic amino acid sequence
787β)	5'-W A	T	Т	Т	G	W-3'	РуНр-β-НрІш-ү-РуРуРуРуНр
787βp)	5'-W A	T	T	T	G	W-3'	Рунр-β-нрІт-ү-Руру-β-Рунр
791β)	5'-W A	T	T	A	G	W-3'	Рунр-β-Руім-ү-РунрРуРунр
791βp)	5'-W A	T	T	A	G	W-3'	.Рунр-β-РуІм-γ-Рунр-β-Рунр
793β)	5'-W A	T	T	G	T	W-3'	Рунр-β-Імнр-у-РуРуРуРунр
793βp)	5'-W A	T	T	G	T	W-3'	Рунр-β-Імнр-ү-РуРу-β-Рунр
794β)	5'-W A	T	T	G	A	W-3'	Рунр-β-ІтРу-у-НрРуРуРуНр
794βp)	5'-W A	T	T	G	A	W-3'	РуНр-β-ІмРу-ү-НрРу-β-РуНр
795β)	5'-W A	T	T	G	G	W-3'	$PyHp-\beta-ImIm-\gamma-PyPyPyPyHp$
795βp)	5'-W A	T	T	G	G	W-3'	РуНр-β-ІтРу-ү-ІтРуРуРуНр
796βp)	5'-W A	T	T	G	C	W-3'	Рунр-β-ІтРу-ү-ІтРу-β-Рунр
799B)	5'-W A	T	T	C	G	W-3'	$PyHp-\beta-PyIm-\gamma-PyImPyPyHp$
799βp)	5'-W A	T	T	C	G	W-3'	РуНр-β-РуІт-ү-РуІт-β-РуНр
803β)	5'-W A	T	A	T	G	M-3;	РуНр-β-НрІт-ү-РуРуНрРуНр
803βp)	5'-W A	T	A	T	G	W-3 '	Рунр-β-нріш-ү-РуРу-β-Рунр
807β)	5'-W A	T	A	A	G	W-3'	РуНр-β-РуІт-ү-РуНрНрРуНр
807βp)	5'-W A	T	A	A	G	W-3'	Рунр-β-Руім-ү-Рунр-β-Рунр
809β)	5'-W A	T	A	G	T	W-3'	${\tt PyHp}\hbox{-}\beta\hbox{-}{\tt ImHp}\hbox{-}\gamma\hbox{-}{\tt PyPyHpPyHp}$
809βp)	5'-W A	T	A	G	T	W-3'	Рунр-β-Імнр-ү-РуРу-β-Рунр
810 β)	5'-W A	T	A	G	A	W-3'	$PyHp-\beta-ImPy-\gamma-HpPyHpPyHp$
810βp)	5'-W A	T	A	G	A	W-3 '	Рунр-β-ІтРу-ү-НрРу-β-Рунр
811β)	5'-W A	T	A	G	G	W-3'	${\tt PyHp}\hbox{-}\beta\hbox{-}{\tt ImIm}\hbox{-}\gamma\hbox{-}{\tt PyPyHpPyHp}$
811βp)	5'-W A	T	A	G	G	W-3.1	. РуНр-β-ІmІm-γ-РуРу-β-РуНр
812 β)	5'-W A	T	A	G	C	W-3'	${\tt PyHp-\beta-ImPy-\gamma-ImPyHpPyHp}$
812βp)	5'-W A	T	A	G	C	W-3 i	$PyHp-\beta-ImPy-\gamma-ImPy-\beta-PyHp$
815β)	5'-W A	T	A	C	G	W-3'	${\tt PyHp-\beta-PyIm-\gamma-PyImHpPyHp}$
815βp)	5'-W A	T	A	C	G	W-3'	РуНр-β-РуІм-ү-РуІм-β-РуНр

017R\	DNA sequence	aromatic amino acid sequence
817β)	5'-W A T G T T W-3'	Ру-β-ІмНрНр-ү-РуРуРуРуНр
817βp)	·5'-W A T G T T W-3'	$Py-\beta-ImHpHp-\gamma-PyPyPy-\beta-Hp$
818β)	5'-W A T G T A W-3'	Ру-β-ІπНрРу-γ-НрРуРуРуНр
818βp)	5'-W A T G T A W-3'	Py - β - $ImHpPy$ - γ - $HpPyPy$ - β - Hp
819 β)	5'-W A T G T G W-3'	Ру-β-ІmНрІm-γ-РуРуРуРуНр
819βp)	5'-W A T G T G W-3'	$Py-\beta-ImHpIm-\gamma-PyPyPy-\beta-Hp$
8 20 β)	5'-W A T G T C W-3'	$Py-\beta-ImHpPy-\gamma-ImPyPyPyHp$
820βp)	5'-W A T G T C W-3'	Ру-β-ІтНрРу-ү-ІтРуРу-β-Нр
821 β)	5'-W A T G A T W-3'	Ру-β-ІπРунр-γ-РунрРуРуНр
821βp)	5'-W A T G A T W-3'	Ру-β-ІтРуНр-ү-РуНрРу-β-Нр
822 β)	5'-W A T G A A W-3'	Ру-β-ІmРуРу-γ-НpНpРуРуНp
822βp)	5'-W A T G A A W-3'	Py - β - $ImPyPy$ - γ - $HpHpPy$ - β - Hp
823 β)	5'-W A T G A G W-3'	$Py-\beta-ImPyIm-\gamma-PyHpPyPyHp$
823βp)	5'-W A T G A G W-3'	$Py-\beta-ImPyIm-\gamma-PyHpPy-\beta-Hp$
824 β)	5'-W A T G A C W-3'	Ру-β-ІmРуРу-γ-ІmНpРуРуНp
824βp)	5'-W A T G A C W-3'	$Py-\beta-ImPyPy-\gamma-ImHpPy-\beta-Hp$
825 β)	5'-W A T G G T W-3'	$Py-\beta-ImImHp-\gamma-PyPyPyPyHp$
825βp)	5'-W A T G G T W-3'	Ру-β-ІмІмНр-ү-РуРуРу-β-Нр
826β)	5'-W A T G G A W-3'	Py - β - $ImImPy$ - γ - $HpPyPyPyHp$
826βp)	5'-W A T G G A W-3'	$Py-\beta-ImImPy-\gamma-HpPyPy-\beta-Hp$
827β)	5'-W A T G C T W-3'	$Py-\beta-ImPyHp-\gamma-PyImPyPyHp$
827βp)	5'-W A T G C T W-3'	Ру-β-ІтРунр-ү-РуІтРу-β-Нр
828β)	5'-W A T G C A W-3'	҅ Ру-β-ІmРуРу-γ-НрІmРуРуНр
828βp)	5'-W A T G C A W-3'	Ру-β-ІшРуРу-ү-НрішРу-β-Нр
829β)	5'-W A T G G G W-3'	$Py-\beta-ImImIm-\gamma-PyPyPyPyHp$
829βp)	5'-W A T G G G W-3'	$Py-eta-ImImIm-\gamma-PyPyPy-eta-Hp$
830β)	5'-W A T G G C W-3'	${\tt Py-}\beta\hbox{-}{\tt ImImPy-}\gamma\hbox{-}{\tt ImPyPyPyHp}$
	5'-W A T G G C W-3'	$Py-\beta-ImImPy-\gamma-ImPyPy-\beta-Hp$
830βp)	3 W R I G G C W-3	ry b rurury-1-ruryry-b-Hb

	832β)	DNA s	equ	enc	:e				
5	832β)								aromatic amino acid sequence
5		5'-W	A	T	G	C	C	W-3'	${\tt Py-\beta-ImPyPy-\gamma-ImImPyPyHp}$
	832βp)	5'-W	A	T	G	C	C	W-3'	$Py-eta-ImPyPy-\gamma-ImImPy-eta-Hp$
	833β)	5'-W	A	T	C	T	T	W-3'	РуНрРуНрНр-ү-Ру-β-ІмРуНр
	833βp)	5′-W	A	T	C	T	T	W-3'	РунрРу-β-нр-ү-Ру-β-ІмРунр
	834ß)	5'-W	A	T	C	T	A	W-3'	РуНрРуНрРу-ү-Нр-β-ІтРуНр
	834βp)	5′-W	A	T	С	T	A	W-3'	РуНрРу-β-Ру-ү-Нр-β-ІтРуНр
0	835β)	5'-W	A	T	C	T	G	W-3'	РуНр-β-НрІм-ү-Ру-β-ІмРуНр
	836β)	5′-W	A	T	C	T	C	W-3'	РуНрРуНрРу-ү-Іm-β-ІmРуНр
	836βp)	5′-W	A	T	C	T	C	W-3'	РуНрРу- β -Ру- γ -Іm- β -ІmРуНр
	837β)	5′-W	A	T	C	A	T	W-3'	РуНрРуРуНр-ү-Ру-β-ІтРуНр
	837βp)	5′-W	A	T	C	A	T	W-3'	РунрРу-β-нр-ү-Ру-β-ітРунр
5	838β)	5′-W	A	T	C	A	Α	W-3'	РуНрРуРуРу-ү-Нр-β-ІмРуНр
	838βp)	5′-W	A	T	C	A	A	W-3 *	РунрРу-β-Ру-ү-Нр-β-ІтРунр
	839β)	5′-W	A	T	C	A	G	W-3 '	Рунр-β-Руім-ү-Ру-β-імРунр
	840β)	5′-W	A	T	C	A	C	W-3'	РунрРуРуРу-ү-Іm-β-ІmРунр
	840βp)	5'-W	A	T	C	A	C	W-3'	$PyHpPy-\beta-Py-\gamma-Im-\beta-ImPyHp$
0	841β)	5′-W	A	T	C.	·G	T	W-3'	$PyHp-\beta-ImHp-\gamma-Py-\beta-ImPyHp$
	842β)	5′-W	A	T	C	G	A	W-3'	$PyHp-\beta-ImPy-\gamma-Hp-\beta-ImPyHp$
	843β)	5′-W	A	T	C	C	T	W-3'	РуНрРуРуНр-ү-РуІтІт-β-Нр
	843βp)	5′-W	A	T	C	C	T	W-3'	$Py-\beta-PyPyHp-\gamma-PyImIm-\beta-Hp$
	844β)	5′-W	A	T	C	C	A	W-3'	РуНрРуРуРу-ү-НрІтІт-β-Нр
5	844βp)	5′-W	A	T	C	C	A	W-3 '	$Py-\beta-PyPyPy-\gamma-HpImIm-\beta-Hp$
	845β)	5′-W	A	T	C	G	G	W-3'	Рунр-β-ішіш-ү-Ру-β-ішРунр
	846β)	5′-W	Α	T	С	G	C	W-3'	РуНр-β-ІтРу-ү-Іт-β-ІтРуНр
	847β)	5′-W	A	T	С	C	G	W-3'	РуНр-β-Руім-ү-Руімім-β-Нр
	848β)	5′-W	A	T	C	Ċ	C	W-3'	РуНрРуРуРу-ү-ІтІштт-β-Нр
0	848βp)	5′-W	Α	T	C	C	C	W-3'	$Py-\beta-PyPyPy-\gamma-ImImIm-\beta-Hp$

	DNA sequence	ition of 7-bp 5'-WAAWNNW-3' with β substitutions aromatic amino acid sequence
851β)	5'-W A A T T G W-3'	РуРу-β-НрІт-γ-РуРуРуНрНр
851βp)	'5'-W A A T T G W-3'	РуРу-β-НрІт-ү-РуРу-β-НрНр
855β)	5'-W A A T A G W-3'	РуРу-β-РуІм-ү-РуНрРуНрНр
855βp)	5'-W A A T A G W-3'	РуРу-β-РуІт-ү-РуНр-β-НрНр
857β)	5'-W A A T G T W-3'	РуРу-β-ІмНр-ү-РуРуРуНрНр
857βp)	5'-W A A T G T W-3'	РуРу-β-ІмНр-ү-РуРу-β-НрНр
858β)	5'-W A A T G A W-3'	РуРу-β-ІmРу-ү-НрРуРуНрНр
858βp)	5'-W A A T G A W-3'	$PyPy-\beta$ - $ImPy-\gamma$ - $HpPy-\beta$ - $HpHp$
859β)	5'-W A A T G G W-3'	РуРу-β-ІтІт-ү-РуРуРуНрНр
859βp)	5'-W A A T G G W-3'	$PyPy-\beta-ImIm-\gamma-PyPy-\beta-HpHp$
860β)	5'-W A A T G C W-3'	$PyPy-\beta-ImPy-\gamma-ImPyPyHpHp$
860βp)	5'-W A A T G C W-3'	РуРу- β -ІmРу- γ -ІmРу- β -НpНp
863β)	5'-W A A T C G W-3'	РуРу- eta -РуІт- γ -РуІтРуНрНр
863βp)	5'-W A A T C G W-3'	РуРу-β-РуІт-ү-РуІт-β-НрНр
867β)	5'-W A A A T G W-3'	РуРу-β-НрІт-ү-РуРуНрНрНр
867βp)	5'-W A A A T G W-3'	РуРу-β-НрІм-ү-РуРу-β-НрНр
871β)	5'-W A A A A G W-3'	РуРу-β-РуІт-ү-РуНрНрНр
87 1 βp)	5'-W A A A A G W-3'	$PyPy-\beta-PyIm-\gamma-PyHp-\beta-HpHp$
873β)	5'-W A A A G T W-3'	РуРу- eta -ІmНр- γ -РуРуНрНрНр
873βp)	5'-W A A A G T W-3'	РуРу-β-ІшНр-ү-РуРу-β-НрНр
874 β)	5'-W A A A G A W-3'	РуРу-β-ІmРу-ү-НрРуНрНрНр
	5'-W A A A G A W-3'	РуРу-β-ІmРу-ү-НрРу-β-НрНр
875β)	5'-W A A A G G W-3'	· РуРу-β-ІmІm-ү-РуРуНрНрНр
875β _P)	5'-W A A A G G W-3'	${\tt PyPy-\beta-ImIm-\gamma-PyPy-\beta-HpHp}$
876β)	5'-W A A A G C W-3'	РуРу-β-ІmРу-γ-ІmРуНрНр
876βp)	5'-W A A A G C W-3'	$PyPy-\beta-ImPy-\gamma-ImPy-\beta-HpHp$
879β)	5'-W A A A C G W-3'	РуРу-β-РуІт-ү-РуІтНрНрНр

	DNA sequence	aromatic amino acid sequence
881 β)	5'-W A A G T T W-3'	Ру-β-ІмНрНр-у-РуРуРуНрНр
881βp) ·	5'-W A A G T T W-3'	$Py-\beta-ImHpHp-\gamma-PyPyPy-\beta-Hp$
882β)	5'-W A A G T A W-3'	Ру-β-ІπΗрРу-γ-НрРуРуНрНр
882βp)	5'-W A A G T A W-3'	Ру-β-ІтНрРу-ү-НрРуРу-β-Нр
883 β)	5'-W A A G T G W-3'	Ру-β-ІтНрІт-ү-РуРуРуНрНр
883βp)	5'-W A A G T G W-3'	Ру-β-ІмНрІм-ү-РуРуРу-β-Нр
884β)	5'-W A A G T C W-3'	$Py-\beta-ImHpPy-\gamma-ImPyPyHpHp$
884βp)	5'-W A A G T C W-3'	$Py-\beta-ImHpPy-\gamma-ImPyPy-\beta-Hp$
885β)	5'-W A A G A T W-3'	Ру-β-ІπРуНр-γ-РуНрРуНрНр
885βp)	5'-W A A G A T W-3'	Ру-β-ІтРунр-ү-РунрРу-β-нр
886 β)	5'-W A A G A A W-3'	Ру-β-ІmРуРу-γ-НрНрРуНрНр
886βp)	5'-W A A G A A W-3'	Ру-β-ІмРуРу-ү-НрНрРу-β-Нр
887β)	5'-W A A G A G W-3'	Ру-β-ІтРуІт-ү-РуНрРуНрНр
887βp)	5'-W A A G A G W-3'	$Py-\beta-ImPyIm-\gamma-PyHpPy-\beta-Hp$
888β)	5'-W A A G A C W-3'	$Py-\beta-ImPyPy-\gamma-ImHpPyHpHp$
888βp)	5'-W A A G A C W-3'	${\tt Py-\beta-ImPyPy-\gamma-ImHpPy-\beta-Hp}$
889β)	5'-W A A G G T W-3'	$Py-\beta-ImImHp-\gamma-PyPyPyHpHp$
889βp)	5'-W A A G G T W-3'	$Py-\beta-ImImHp-\gamma-PyPyPy-\beta-Hp$
890β)	5'-W A A G G A W-3'	$Py-\beta-ImImPy-\gamma-HpPyPyHpHp$
890βp)	5'-W A A G G A W-3'	${\tt Py-\beta-ImImPy-\gamma-HpPyPy-\beta-Hp}$
89 1 β)	5'-W A A G C T W-3'	$Py-\beta-ImPyHp-\gamma-PyImPyHpHp$
891βp)	5'-W A A G C T W-3'	$Py-\beta-ImPyHp-\gamma-PyImPy-\beta-Hp$
892 β)	5'-W A A G C A W-3'	$Py-\beta-ImPyPy-\gamma-HpImPyHpHp$
892βp)	5'-W A A G C A W-3'	$Py-\beta-ImPyPy-\gamma-HpImPy-\beta-Hp$
893β)	5'-W A A G G G W-3'	$Py-\beta-ImImIm-\gamma-PyPyPyHpHp$
893βp)	5'-W A A G G G W-3'	$Py-\beta-ImImIm-\gamma-PyPyPy-\beta-Hp$
-89 4 β)	5'-W A A G G C W-3'	$Py-\beta-ImImPy-\gamma-ImPyPyHpHp$
894βp)	5'-W A A G G C W-3'	${\tt Py-\beta-ImImPy-\gamma-ImPyPy-\beta-Hp}$
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	TABLE 73 (co	ont): 10-ring Hairpin Polyamides for recogn	ition of 7-bp 5'-WAASNNW-3' with β substitutions.
		DNA sequence	aromatic amino acid sequence
	896β)	5'-W A A G C C W-3'	Ру-β-ІмРуРу-ү-ІмІмРуНрНр
	896βp)	5'-W A A G C C W-3'	Py-β-ImPyPy-γ-ImImPy-β-Hp
5	897β)	'5'-W A A C T T W-3'	РуРуРуНрНр-ү-Ру-β-ІмНрНр
	897βp)	5'-W A A C T T W-3'	РуРуРу-β-Нр-ү-Ру-β-ІтНрНр
	898 β)	5'-W A A C T A W-3'	РуРуРуНрРу-γ-Нр-β-ІπНрНр
	898βp)	5'-W A A C T A W-3'	РуРуРу-β-Ру-ү-Нр-β-ІмНрНр
	899 β)	5'-W A A C T G W-3'	РуРу-β-НрІт-ү-Ру-β-ІтНрНр
10	900β)	5'-W A A C T C W-3'	РуРуРуНрРу-ү-Іm-β-ІmНpНp
	900βp)	5'-W A A C T C W-3'	РуРуРу- β -Ру- γ -Іm- β -ІmНpНp
	901β)	5'-W A A C A T W-3'	РуРуРуРуНр-γ-Ру-β-ІπНрНр
	901βp)	5'-W A A C A T W-3'	РуРуРу-β-Нр-γ-Ру-β-ІπНрНр
	902β)	5'-W A A C A A W-3'	РуРуРуРуРу-γ-Нр-β-ІπНрНр
15	902βp)	5'-W A A C A A W-3'	РуРуРу-β-Ру-ү-Нр-β-ІмНрНр
	903β)	5'-W A A C A G W-3'	$PyPy-\beta-PyIm-\gamma-Py-\beta-ImHpHp$
	904β)	5'-W A A C A C W-3'	РуРуРуРуРу-ү-Іm-β-ІmНрНр
	90 4 βp)	5'-W A A C A C W-3'	$PyPyPy-\beta-Py-\gamma-Im-\beta-ImHpHp$
	905β)	5'-W A A C G T W-3'	РуРу- β -ІмНр- γ -Ру- β -ІмНрНр
20	906β)	5'-W A A C G A W-3'	$PyPy-\beta-ImPy-\gamma-Hp-\beta-ImHpHp$
	907β)	5'-W A A C C T W-3'	$PyPyPyPyHp-\gamma-PyImIm-\beta-Hp$
	907βp)	5'-W A A C C T W-3'	${\tt Py-\beta-PyPyHp-\gamma-PyImIm-\beta-Hp}$
	908β)	5'-W A A C C A W-3'	$PyPyPyPyPy-\gamma-HpImIm-\beta-Hp$
	908βp)	5'-W A A C C A W-3'	${\tt Py-\beta-PyPyPy-\gamma-HpImIm-\beta-Hp}$
25	909β)	5'-W A A C G G W-3'	$PyPy-\beta-ImIm-\gamma-Py-\beta-ImHpHp$
	910β)	5'-W A A C G C W-3'	PyPy-β-ImPy-γ-Im-β-ImHpHp
	911β)	5'-W A A C C G W-3'	PyPy-β-PyIm-γ-PyImIm-β-Hp
	912β)	5'-W A A C C C W-3'	$PyPyPyPyPy-\gamma-ImImIm-\beta-Hp$
	912βp)	5'-W A A C C C W-3'	$\mathtt{Py-}eta\mathtt{-PyPyPy-}\gamma\mathtt{-ImImIm-}eta\mathtt{-Hp}$

	TABLE 74: 10-ring Hairpin Polyamides for recog DNA sequence	gnition of 7-bp 5'-WACWNNW-3' with β substitutions. aromatic amino acid sequence
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	913β) 5'-W A C T T T W-3'	РуРуНрНрнр-у-РуРу-β-ІмНр
5	913βp) 5'-W A C T T T W-3'	РуРу-β-НрНр-ү-РуРу-β-ІмНр
	914β) 5'-W A C T T A W-3'	РуРуНрНрРу-ү-НрРу-β-ІмНр
	914βp) 5'-W A C T T A W-3'	РуРу-β-НрРу-γ-НрРу-β-ІмНр
	915β) 5'-W A C T T G W-3'	РуРу-β-НрІт-ү-РуРу-β-ІтНр
	916β) 5'-W A C T T C W-3'	РуРуНрНрРу-ү-ІтРу-β-ІтНр
10	916βp) 5'-W A C T T C W-3'	РуРу- β -НрРу- γ -ІmРу- β -ІmНр
	917β) 5'-W A C T A T W-3'	РуРуНрРуНр-γ-РуНр-β-ІπНр
	917βp) 5'-W A C T A T W-3'	РуРуНрРуНр-γ-РуНр-β-ІπНр
	918β) 5'-W A C T A A W-3'	РуРуНрРуРу-γ-НрНр-β-ІmНр
	918βp) 5'-W A C T A A W-3'	РуРу- eta -РуРу- γ -НрНр- eta -ІmНр
15	919β) 5'-W A C T A G W-3'	$PyPy-\beta-PyIm-\gamma-PyHp-\beta-ImHp$
	920β) 5'-W A C T A C W-3'	$PyPyHpPyPy-\gamma-ImHp-\beta-ImHp$
	920βp) 5'-W A C T A C W-3'	$PyPy-\beta-PyPy-\gamma-ImHp-\beta-ImHp$
	921β) 5'-W A C T G T W-3'	$PyPy-\beta-ImHp-\gamma-PyPy-\beta-ImHp$
	922β) 5'-W A C T G A W-3'	$PyPy-\beta-ImPy-\gamma-HpPy-\beta-ImHp$
20	923β) 5'-W A C T G G W-3'	${\tt PyPy-\beta-ImIm-\gamma-PyPy-\beta-ImHp}$
	924β) 5'-W A C T G C W-3'	${\tt PyPy-\beta-ImPy-\gamma-ImPy-\beta-ImHp}$
	925β) 5'-W A C T C T W-3'	$PyPyHpPyHp-\gamma-PyIm-\beta-ImHp$
	925 $eta_{ extbf{p}}$) 5'-W A C T C T W-3'	$PyPy-\beta-PyHp-\gamma-PyIm-\beta-ImHp$
	926β) 5'-W A C T C A W-3'	$PyPyHpPyPy-\gamma-HpIm-\beta-ImHp$
25	926βp) 5'-W A C T C A W-3'	$PyPy-\beta-PyPy-\gamma-HpIm-\beta-ImHp$
	927β) 5'-W A C T C G W-3'	$_{_{ }}$ PyPy- β -PyIm- γ -PyIm- β -ImHp
	928β) 5'-W A C T C C W-3'	РуРуНрРуРу- γ -ІmІm- β -ІmНp
	928βp) 5'-W A C T C C W-3'	${\tt PyPy-\beta-PyPy-\gamma-ImIm-\beta-ImHp}$
	929β) 5'-W A C A T T W-3'	РуРуРуНрНр- γ -РуРу- β -ІmНр
30	929βp) 5'-W A C A T T W-3'	РуРу-β-НрНр-ү-РуРу-β-ІтНр
	930β) 5'-W A C A T A W-3'	РуРуРуНрРу-γ-НрРу-β-ІπНр
	930βp) 5'-W A C A T A W-3'	РуРу- β -HpРу- γ -HpРу- β -ImHp
	931β) 5'-W A C A T G W-3'	${\tt PyPy-\beta-HpIm-\gamma-PyPy-\beta-ImHp}$

	DNA sequence	aromatic amino acid sequence
932β)	5'-W A C A T C W-3'	РуРуРуНрРу-ү-ІтРу-β-ІтНр
932βp)	.5'-W A C A T C W-3'	РуРу- β -НрРу- γ -ІmРу- β -ІmНр
933β)	5'-W A C A A T W-3'	РуРуРуРуНр-ү-РуНр-β-ІщНр
933βp)	5'-W A C A A T W-3'	$PyPy-\beta-PyHp-\gamma-PyHp-\beta-ImHp$
934β)	5'-W A C A A A W-3'	РуРуРуРуРу-ү-НрНр-β-ІмНр
934βp)	5'-W A C A A A W-3'	P у P у- β - P у P у- γ - H р H р- β - I m H р
935β)	5'-W A C A A G W-3'	$PyPy-\beta-PyIm-\gamma-PyHp-\beta-ImHp$
936 β)	5'-W A C A A C W-3'	РуРуРуРуРу- γ -ІmHp- β -ІmHp
936βp)	5'-W A C A A C W-3'	$PyPy-\beta-PyPy-\gamma-ImHp-\beta-ImHp$
937β)	5'-W A C A G T W-3'	$PyPy-\beta-ImHp-\gamma-PyPy-\beta-ImHp$
938β)	5'-W A C A G A W-3'	\mathtt{PyPy} - β - \mathtt{ImPy} - γ - \mathtt{HpPy} - β - \mathtt{ImHp}
939β)	5'-W A C A G G W-3'	${\tt PyPy-\beta-ImIm-\gamma-PyPy-\beta-ImHp}$
940β)	5'-W A C A G C W-3'	${\tt PyPy-\beta-ImPy-\gamma-ImPy-\beta-ImHp}$
941β)	5'-W A C A C T W-3'	$PyPyPyPyHp-\gamma-PyIm-\beta-ImHp$
941βp)	5'-W A C A C T W-3'	${\tt PyPy-\beta-PyHp-\gamma-PyIm-\beta-ImHp}$
942β)	5'-W A C A C A W-3'	РуРуРуРуРу- γ -НрІ \mathfrak{m} - β -І \mathfrak{m} Нр
942βp)	5'-W A C A C A W-3'	${\tt PyPy-\beta-PyPy-\gamma-HpIm-\beta-ImHp}$
943β)	5'-W A C A C G W-3'	${\tt PyPy-\beta-PyIm-\gamma-PyIm-\beta-ImHp}$
944β)	5'-W A C A C C W-3'	$PyPyPyPyPy-\gamma-ImIm-\beta-ImHp$
944βp)	5'-W A C A C C W-3'	$PyPy-\beta-PyPy-\gamma-ImIm-\beta-ImHp$

DNA sequence aromatic amino acid sequence 945β) 5′-WACGTAW-3' Py-β-ImHpPy-γ-PyPy-β-ImHp 946β) 5′-WACGTAW-3' Py-β-ImHpPy-γ-HpPy-β-ImHp 947β) 5′-WACGTAW-3' Py-β-ImHpPy-γ-HpPy-β-ImHp 948β) 5′-WACGATW-3' Py-β-ImHpPy-γ-PyPy-β-ImHp 949β) 5′-WACGATW-3' Py-β-ImPPPy-γ-ImPy-β-ImHp 950β) 5′-WACGATW-3' Py-β-ImPyPy-γ-HpPy-β-ImHp 951β) 5′-WACGATW-3' Py-β-ImPyPy-γ-ImHp-β-ImHp 952β) 5′-WACGATW-3' Py-β-ImImPy-γ-Py-β-ImHp 953β) 5′-WACGATW-3' Py-β-ImImPy-γ-Py-β-ImHp 954β) 5′-WACGATW-3' Py-β-ImImPy-γ-Py-β-ImHp 954β) 5′-WACGATW-3' Py-β-ImImPy-γ-Py-β-ImHp 955β) 5′-WACGATW-3' Py-β-ImPy-γ-Py-β-ImImP 957β) 5′-WACCATW-3' Py-β-ImPy-γ-Py-β-ImImHp 958β) 5′-WACCATW-3' PyPyPy-β-Py-γ-Hp-β-ImImHp 958β) 5′-WACCATW-3' PyPyPy-β-Py-γ-Py-β-ImImHp	ions.
946β) 5'-W A C G T A W-3' Py-β-ImHpPy-γ-HpPy-β-ImHp 947β) 5'-W A C G T G W-3' Py-β-ImHpPy-γ-HpPy-β-ImHp 948β) 5'-W A C G T C W-3' Py-β-ImHpPy-γ-ImPy-β-ImHp 949β) 5'-W A C G A T W-3' Py-β-ImHpPy-γ-ImPy-β-ImHp 950β) 5'-W A C G A A W-3' Py-β-ImPyPy-γ-HpPp-β-ImHp 951β) 5'-W A C G A C W-3' Py-β-ImPyPy-γ-ImPp-β-ImHp 952β) 5'-W A C G G T W-3' Py-β-ImPyPy-γ-ImHp-β-ImHp 953β) 5'-W A C G G A W-3' Py-β-ImImPy-γ-PyPy-β-ImHp 955β) 5'-W A C G G C T W-3' Py-β-ImPyPy-γ-ImPy-β-ImHp 956β) 5'-W A C G C T W-3' Py-β-ImPyPy-γ-HpPy-β-ImHp 957β) 5'-W A C G C T W-3' Py-β-ImPyPy-γ-Py-β-ImHp 957β) 5'-W A C C T T W-3' Py-β-ImPyPy-γ-Py-β-ImHp 957β) 5'-W A C C T W-3' Py-β-ImPyPy-γ-Py-β-ImImHp 958β) 5'-W A C C T W-3' PyPyPy-β-Py-γ-Py-β-ImImHp 958β) 5'-W A C C T W-3' PyPyPy-β-Py-γ-Im-β-ImImHp 960β) 5'-W A C C T C W-3' PyPyPy-β-Py-γ-Im-β-ImImHp 960β) 5'-W A C C A T W-3' PyPyPy-β-Py-γ-Ip-β	
947β) 5'-W A C G T G W-3' 948β) 5'-W A C G T C W-3' 949β) 5'-W A C G A T W-3' 950β) 5'-W A C G A A W-3' 951β) 5'-W A C G A G W-3' 951β) 5'-W A C G A G W-3' 952β) 5'-W A C G A C W-3' 953β) 5'-W A C G G A C W-3' 954β) 5'-W A C G G A W-3' 955β) 5'-W A C G G A W-3' 955β) 5'-W A C G G A W-3' 956β) 5'-W A C G G A W-3' 956β) 5'-W A C G G A W-3' 956β) 5'-W A C G G A W-3' 97-β-ImPyPy-γ-ImPp-β-ImHp 957β) 5'-W A C G C T W-3' 957β-ImPyPy-γ-Py-β-ImHp 957β) 5'-W A C C T T W-3' 958β) 5'-W A C C T T W-3' 958β) 5'-W A C C T A W-3' 959β-ImPyPy-β-ImPy-β-ImImHp 958β) 5'-W A C C T C W-3' 97-β-ImPyPy-β-ImImHp 958β) 5'-W A C C T C W-3' 97-β-ImPyPy-β-ImImHp 958β) 5'-W A C C T A W-3' 97-β-ImPyPy-β-ImImHp 958β) 5'-W A C C T C W-3' 97-β-ImPyPy-β-ImImHp 958β) 5'-W A C C T A W-3' 97-β-ImPyPy-β-ImImHp 958β) 5'-W A C C T C W-3' 97-β-ImPyPy-β-ImImHp 960β) 5'-W A C C T C W-3' 97-β-IMPY-β-ImImHp 960β) 5'-W A C C A T W-3' 97-β-ImPyPy-β-ImImHp 960β) 5'-W A C C A T W-3' 97-β-ImPyPy-β-ImImHp 960β) 5'-W A C C A T W-3' 97-β-ImPyPy-β-ImImHp 960β) 5'-W A C C A T W-3' 97-β-ImPyPy-β-ImImHp 960β) 5'-W A C C A T W-3' 97-β-ImPyPy-β-Im-β-ImImHp 961β) 5'-W A C C A T W-3' 97-β-ImPyPy-β-Py-β-ImImHp 962β) 5'-W A C C A W-3' 97-β-ImPyPy-β-Py-β-ImImHp 963β) 5'-W A C C A C W-3' 97-β-ImPyPy-β-Py-β-ImImHp 964β) 5'-W A C C A C W-3' 97-β-ImPyPy-β-Py-β-ImImHp 964β) 5'-W A C C A C W-3' 97-β-ImPyPy-β-Py-β-ImImHp 964β) 5'-W A C C A C W-3' 97-β-ImPyPy-β-Py-γ-Im-β-ImImHp 964β) 5'-W A C C A C W-3' 97-β-ImPyPy-β-Py-β-ImImHp 97-β-ImImHp 97-β-ImPy-γ-Py-β-ImImHp 97-β-ImPy-γ-Py-β-ImImHp 98-β-ImPy-γ-Py-β-ImImHp 99-β-ImPy-γ-Py-β-ImImHp 99-β-ImPy-γ-Py-β-ImHp 99-β-ImPy-γ-Py-β-I	
948β) 5′-W A C G T C W-3' Py-β-ImHpPy-γ-ImPy-β-ImHp 949β) 5′-W A C G A T W-3' Py-β-ImPyHp-γ-PyHp-β-ImHp 950β) 5′-W A C G A A W-3' Py-β-ImPyHp-γ-PyHp-β-ImHp 951β) 5′-W A C G A G W-3' Py-β-ImPyHp-γ-PyHp-β-ImHp 952β) 5′-W A C G G A C W-3' Py-β-ImPyHp-γ-PyHp-β-ImHp 953β) 5′-W A C G G A W-3' Py-β-ImPyPy-γ-ImHp-β-ImHp 954β) 5′-W A C G C T W-3' Py-β-ImPyPy-γ-PyHp-β-ImHp 955β) 5′-W A C G C T W-3' Py-β-ImPyHp-γ-PyHp-β-ImHp 957β) 5′-W A C G C T W-3' Py-β-ImPyHp-γ-PyIm-β-ImHp 957β) 5′-W A C C T T W-3' PyPyPyHpHp-γ-Py-β-ImImHp 957β) 5′-W A C C T T W-3' PyPyPyPyHpHp-γ-Py-β-ImImHp 958β) 5′-W A C C T A W-3' PyPyPyPy-β-Py-γ-Hp-β-ImImHp 958β) 5′-W A C C T G W-3' PyPyPy-β-Py-γ-Hp-β-ImImHp 959β) 5′-W A C C T C W-3' PyPyPy-β-Py-γ-Im-β-ImImHp 960β) 5′-W A C C A T W-3' PyPyPyPy-β-Py-γ-Im-β-ImImHp 961β) 5′-W A C C A T W-3' PyPyPyPy-β-Py-γ-Hp-β-ImImHp 962β) 5′-W A C C A G W-3' PyPyPyPy-β-Py-γ-Hp-β-ImImHp 963β) 5′-W A C C	
949β) 5'-W A C G A T W-3' Py-β-ImPyHp-γ-PyHp-β-ImHp 950β) 5'-W A C G A A W-3' Py-β-ImPyHp-γ-PyHp-β-ImHp 951β) 5'-W A C G A G W-3' Py-β-ImPyHp-γ-PyHp-β-ImHp 952β) 5'-W A C G A C W-3' Py-β-ImPyPy-γ-ImHp-β-ImHp 953β) 5'-W A C G G T W-3' Py-β-ImPyPy-γ-ImHp-β-ImHp 954β) 5'-W A C G G A W-3' Py-β-ImPyPy-γ-PyPy-β-ImHp 955β) 5'-W A C G C T W-3' Py-β-ImPyPy-γ-PyIm-β-ImHp 957β) 5'-W A C G C A W-3' Py-β-ImPyPy-γ-PyIm-β-ImHp 957β) 5'-W A C C T T W-3' PyPyPyPyHpHp-γ-Py-β-ImImHp 957β) 5'-W A C C T T W-3' PyPyPyPyHpHp-γ-Py-β-ImImHp 958β) 5'-W A C C T A W-3' PyPyPyPyHpPy-γ-Py-β-ImImHp 958β) 5'-W A C C T A W-3' PyPyPyPy-β-Py-γ-Hp-β-ImImHp 958β) 5'-W A C C T G W-3' PyPyPy-β-Py-γ-Im-β-ImImHp 960β) 5'-W A C C T C W-3' PyPyPyPyPy-γ-Im-β-ImImHp 960β) 5'-W A C C A T W-3' PyPyPyPyPyPy-γ-Py-β-ImImHp 961β) 5'-W A C C A T W-3' PyPyPyPyPy-β-Py-γ-Hp-β-ImImHp 962β) 5'-W A C C A C A W-3' PyPyPyPy-β-Py-γ-Hp-β-ImImHp 963β) 5'-W A C	
950β) 5′-W A C G A A W-3' Py-β-ImPyPy-γ-HpHp-β-ImHp 951β) 5′-W A C G A G W-3' Py-β-ImPyIm-γ-PyHp-β-ImHp 952β) 5′-W A C G A C W-3' Py-β-ImPyPy-γ-ImHp-β-ImHp 953β) 5′-W A C G G T W-3' Py-β-ImImPy-γ-PyPy-β-ImHp 954β) 5′-W A C G G A W-3' Py-β-ImImPy-γ-PyPy-β-ImHp 955β) 5′-W A C G C T W-3' Py-β-ImPyPy-γ-PyIm-β-ImHp 957β) 5′-W A C G C T W-3' Py-β-ImPyPy-γ-PyIm-β-ImHp 957βp) 5′-W A C C T T W-3' PyPyPyPyPy-β-Hp-γ-Py-β-ImImHp 958β) 5′-W A C C T A W-3' PyPyPyPy-β-Hp-γ-Py-β-ImImHp 958βp) 5′-W A C C T G W-3' PyPyPyPy-β-Py-γ-Hp-β-ImImHp 950βp) 5′-W A C C T C W-3' PyPyPyPy-β-Py-γ-Im-β-ImImHp 960βp) 5′-W A C C T C W-3' PyPyPyPy-β-Py-γ-Im-β-ImImHp 961β) 5′-W A C C A T W-3' PyPyPyPy-β-Hp-γ-Py-β-ImImHp 962βp) 5′-W A C C A T W-3' PyPyPyPy-β-Hp-γ-Py-β-ImImHp 962βp) 5′-W A C C A C W-3' PyPyPy-β-Py-γ-Hp-β-ImImHp 964βp) 5′-W A C C A C W-3' PyPyPy-β-Py-γ-Im-β-ImImHp 964βp) 5′-W A C C A C W-3' PyPyPy-β-Py-γ-Im-β-ImImHp 965β) <	
951β) 5′-W A C G A G W-3' Py-β-ImPyIm-γ-PyHp-β-ImHp 952β) 5′-W A C G A C W-3' Py-β-ImPyPy-γ-ImHp-β-ImHp 953β) 5′-W A C G G T W-3' Py-β-ImPyPy-γ-ImHp-β-ImHp 954β) 5′-W A C G G A W-3' Py-β-ImPyPy-γ-HpPy-β-ImHp 955β) 5′-W A C G C T W-3' Py-β-ImPyPy-γ-HpPy-β-ImHp 956β) 5′-W A C G C T W-3' Py-β-ImPyPy-γ-HpIm-β-ImHp 957β) 5′-W A C C T T W-3' PyPyPyPy-β-Hp-γ-Py-β-ImImHp 957βp) 5′-W A C C T A W-3' PyPyPyPy-β-Hp-γ-Py-β-ImImHp 958β) 5′-W A C C T A W-3' PyPyPyPy-β-Py-γ-Hp-β-ImImHp 958βp) 5′-W A C C T G W-3' PyPyPy-β-Py-γ-Im-β-ImImHp 960βp) 5′-W A C C T C W-3' PyPyPy-β-Py-γ-Im-β-ImImHp 960βp) 5′-W A C C A T W-3' PyPyPyPy-β-Py-γ-Im-β-ImImHp 961β) 5′-W A C C A T W-3' PyPyPyPy-β-Py-γ-Ip-β-ImImHp 962βp) 5′-W A C C A G W-3' PyPyPyPy-β-Py-γ-Hp-β-ImImHp 963β) 5′-W A C C A G W-3' PyPyPyPy-β-Py-γ-Ip-β-ImImHp 964βp) 5′-W A C C A C W-3' PyPyPyPy-β-Py-γ-Im-β-ImImHp 964βp) 5′-W A C C A C W-3' PyPyPy-β-Py-γ-Im-β-ImImHp 965β) <t< td=""><td></td></t<>	
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962β) 5'-W A C C A A W-3' PyPyPyPyPy-γ-Hp-β-ImImHp 962βp) 5'-W A C C A A W-3' PyPyPyPy-β-Py-γ-Hp-β-ImImHp 963β) 5'-W A C C A G W-3' PyPyPy-β-PyIm-γ-Py-β-ImImHp 964β) 5'-W A C C A C W-3' PyPyPyPyPy-γ-Im-β-ImImHp 964βp) 5'-W A C C A C W-3' PyPyPy-β-Py-γ-Im-β-ImImHp 965β) 5'-W A C C G T W-3' PyPy-β-ImHp-γ-Py-β-ImImHp	
962βp) 5'-W A C C A A W-3' PyPyPy-β-Py-γ-Hp-β-ImImHp 963β) 5'-W A C C A G W-3' PyPy-β-PyIm-γ-Py-β-ImImHp 964β) 5'-W A C C A C W-3' PyPyPyPyPy-γ-Im-β-ImImHp 964βp) 5'-W A C C A C W-3' PyPyPy-β-Py-γ-Im-β-ImImHp 965β) 5'-W A C C G T W-3' PyPy-β-ImHp-γ-Py-β-ImImHp	
963β) 5'-W A C C A G W-3' PyPy-β-PyIm-γ-Py-β-ImImHp 964β) 5'-W A C C A C W-3' PyPyPyPyPy-γ-Im-β-ImImHp 964βp) 5'-W A C C A C W-3' PyPyPy-β-Py-γ-Im-β-ImImHp 965β) 5'-W A C C G T W-3' PyPy-β-ImHp-γ-Py-β-ImImHp	
964β) 5'-W A C C A C W-3' PyPyPyPyPy-γ-Im-β-ImImHp 964βp) 5'-W A C C A C W-3' PyPyPy-β-Py-γ-Im-β-ImImHp 965β) 5'-W A C C G T W-3' PyPy-β-ImHp-γ-Py-β-ImImHp	
964βp) 5'-W A C C A C W-3' PyPyPy-β-Py-γ-Im-β-ImImHp 965β) 5'-W A C C G T W-3' PyPy-β-ImHp-γ-Py-β-ImImHp	
965β) 5'-W A C C G T W-3' PyPy-β-ImHp-γ-Py-β-ImImHp	
966 β) 5'-W A C C G A W-3' PyPy- β -ImPy- γ -Hp- β -ImImHp	
969 β) 5'-W A C G G G W-3' Py- β -ImImIm- γ -PyPy- β -ImHp	
970β) 5'-W A C G G C W-3' Py-β-ImImPy-γ-ImPy-β-ImHp	

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	TABLE 75 (c	ont): 10-ring Hairpin Polyamides for rec	cognition of 7-bp 5'-WACSNNW-3' with β substitutions.
	······································	DNA sequence	aromatic amino acid sequence
	971β)	5'-W A C G C G W-3'	Py-β-ImPyIm-γ-PyIm-β-ImHp
	972β)	5'-W A C G C C W-3'	$Py-\beta-ImPyPy-\gamma-ImIm-\beta-ImHp$
5	973β)	'5'-W A C C G G W-3'	$PyPy-\beta-ImIm-\gamma-Py-\beta-ImImHp$
	974β)	5'-W A C C G C W-3'	$PyPy-\beta-ImPy-\gamma-Im-\beta-ImImHp$
	975β)	5'-W A C C C G W-3'	PyPy-β-PyIm-γ-PyImImImHp

-	TABLE 76: 1	10-ring Hairpin Polyamides for recognition	of 7-bp 5'-WTGWNNW-3' with β substitutions.
=		DNA sequence	aromatic amino acid sequence
	979β)	5'-W T G T T G W-3'	${ t HpIm}{ t -}{f eta}{ t -}{ t HpIm}{ t -}{f \gamma}{ t -}{ t PyPyPyPyPy}$
5	979βp) ·	5'-W T G T T G W-3'	${\tt HpIm-}\beta\hbox{-}{\tt HpIm-}\gamma\hbox{-}{\tt PyPy-}\beta\hbox{-}{\tt PyPy}$
•	983β)	5'-W T G T A G W-3'	${\tt HpIm-\beta-PyIm-\gamma-PyHpPyPyPy}$
	983βp)	5'-W T G T A G W-3'	${ t HpIm} - eta - { t PyIm} - \gamma - { t PyHp} - eta - { t PyPy}$
	985β)	5'-W T G T G T W-3'	нрІт-β-Ітнр-γ-РуРуРуРуРу
	985βp)	5'-W T G T G T W-3'	${\tt HpIm-\beta-ImHp-\gamma-PyPy-\beta-PyPy}$
10	986β)	5'-W T G T G A W-3'	НрІm-β-ІmРу-γ-НрРуРуРуРу
	986βp)	5'-W T G T G A W-3'	НрІт-β-ІтРу-ү-НрРу-β-РуРу
	987β)	5'-W T G T G G W-3'	${\tt HpIm-\beta-ImIm-\gamma-PyPyPyPyPy}$
	987βp)	5'-W T G T G G W-3'	${\tt HpIm-}\beta\hbox{-}{\tt ImIm-}\gamma\hbox{-}{\tt PyPy-}\beta\hbox{-}{\tt PyPy}$
	988ß)	5'-W T G T G C W-3'	НрІт-β-ІтРу-ү-ІтРуРуРуРу
15	988βp)	5'-W T G T G C W-3'	${\tt HpIm-\beta-ImPy-\gamma-ImPy-\beta-PyPy}$
	991β)	5'-W T G T C G W-3'	НрІм-β-Руім-ү-РуімРуРуРу
	991ßp)	5'-W T G T C G W-3'	${\tt HpIm-\beta-PyIm-\gamma-PyIm-\beta-PyPy}$
	995β)	5'-W T G A T G W-3'	НрІm-β-НрІm-γ-РуРуНрРуРу
	995βp)	5'-W T G A T G W-3'	${\tt HpIm-}\beta{\tt -HpIm-}\gamma{\tt -PyPy-}\beta{\tt -PyPy}$
20	999β)	5'-W T G A A G W-3'	$ ext{HpIm-}eta ext{-PyIm-}\gamma ext{-PyHpHpPyPy}$
	999βp)	5'-W T G A A G W-3'	${\tt HpIm-\beta-PyIm-\gamma-PyHp-\beta-PyPy}$
	1001β)	5'-W T G A G T W-3'	${ t HpIm} - eta - { t Im} { t Hp} - \gamma - { t Py} { t$
	1001 β p)	5'-W T G A G T W-3'	${ t HpIm} - eta - { t Im} { t Hp} - \gamma - { t PyP} \gamma - eta - { t PyP} \gamma$
	1002β)	5'-W T G A G A W-3'	HpIm-β-ImРу-γ-HpРуHpРуРу
25	1002βp)	5'-W T G A G A W-3'	${ t HpIm} - eta - { t ImPy} - \gamma - { t HpPy} - eta - { t PyPy}$
	1003β)	5'-W T G A G G W-3'	$^{\circ}$ HpIm- β -ImIm- γ -РуРуНрРуРу
	1003βp)	5'-W T G A G G W-3'	${ t HpIm} - eta - { t ImIm} - \gamma - { t PyPy} - eta - { t PyPy}$
	1004β)	5'-W T G A G C W-3'	${\tt HpIm-\beta-ImPy-\gamma-ImPyHpPyPy}$
	1004βp)	5'-W T G A G C W-3'	${\tt HpIm-\beta-ImPy-\gamma-ImPy-\beta-PyPy}$
30	1007β)	5'-W T G A C G W-3'	${\tt HpIm-}\beta\hbox{-}{\tt PyIm-}\gamma\hbox{-}{\tt PyImHpPyPy}$
	1007βp)	5'-W T G A C G W-3'	${\tt HpIm-\beta-PyIm-\gamma-PyIm-\beta-PyPy}$

L	DNA sequence	ion of 7-bp 5'-WTGSNNW-3' with β substitutio aromatic amino acid sequence
1009β)	5'-W T G G T T W-3'	HpImIm-β-Hp-γ-РуРуРуРуРу
1009βp)·	5'-W T G G T T W-3'	НрІшІш-р-нр-у-ру-ру-руру
1010β)	5'-W T G G T A W-3'	НрІтіт-β-Ру-ү-НрРуРуРуРу
1010βp)	5'-W T G G T A W-3'	НрІmІm-β-Ру-γ-Нр-β-РуРуРу
1011β)	5'-W T G G T G W-3'	\mathtt{HpImIm} - β - \mathtt{Im} - γ - $\mathtt{PyPyPyPyPy}$
1011βp)	5'-W T G G T G W-3'	$HpImIm-\beta-Im-\gamma-Py-\beta-PyPyPy$
1012β)	5'-W T G G T C W-3'	НрІmІm-β-Ру-γ-ІmРуРуРуРу
1012βp)	5'-W T G G T C W-3'	$HpImIm-\beta-Py-\gamma-Im-\beta-PyPyPy$
1013β)	5'-W T G G A T W-3'	НрІmІm-β-Hp-γ-РуНpРуРуРу
1013βp)	5'-W T G G A T W-3'	НрІтіт-β-Нр-ү-Ру-β-РуРуРу
1014β)	5'-W T G G A A W-3'	НрІmІm-β-Ру-γ-НрНрРуРуРу
1014βp)	5'-W T G G A A W-3'	${ t HpImIm}$ - ${ t B}$ - ${ t Py}$ - ${ t \gamma}$ - ${ t Hp}$ - ${ t B}$ - ${ t Py}$ ${ t Py}$ ${ t Py}$
1015β)	5'-W T G G A G W-3'	НрІmІm-β-Іm-γ-РуНрРуРуРу
1015βp)	5'-W T G G A G W-3'	${\tt HpImIm-\beta-Im-\gamma-Py-\beta-PyPyPy}$
1016β)	5'-W T G G A C W-3'	\texttt{HpImIm} - β - \texttt{Py} - γ - $\texttt{ImHpPyPyPy}$
1016βp)	5'-W T G G A C W-3'	${\tt HpImIm-\beta-Py-\gamma-Im-\beta-PyPyPy}$
1019β)	5'-W T G G C T W-3'	НрІ шш-β-Нр-γ-ЪуІшБуБуБу
1020β)	5'-W T G G C A W-3'	НрІмІм-β-Ру-γ-НрІмРуРуРу
1021β)	5'-W T G C T T W-3'	НрІmРуНрНр-γ-Ру-β-ІmРуРу
1021βp)	5'-W T G C T T W-3'	${\tt HpImPy-\beta-Hp-\gamma-Py-\beta-ImPyPy}$
1022β)	5'-W T G C T A W-3'	НрІшРуНрРу-γ-Нр-β-ІшРуРу
1022βp)	5'-W T G C T A W-3'	НрІмРу-β-Ру-у-Нр-β-ІмРуРу
1023β)	5'-W T G C T G W-3'	HpIm- β -HpIm- γ -Py- β -ImPyPy
1024β)	5'-W T G C T C W-3'	${\tt HpImPyHpPy-\gamma-Im-\beta-ImPyPy}$
1024βp)	5'-W T G C T C W-3'	${\tt HpImPy-}\beta\hbox{-}{\tt Py-}\gamma\hbox{-}{\tt Im-}\beta\hbox{-}{\tt ImPyPy}$
1025β)	5'-W T G C A T W-3'	НрІмРуРуНр-ү-Ру-β-ІмРуРу
1025βp)	5'-W T G C A T W-3'	${\tt HpImPy-}\beta{\tt -Hp-}\gamma{\tt -Py-}\beta{\tt -ImPyPy}$
1026β)	5'-W T G C A A W-3'	НрІтРуРуРу-ү-Нр-β-ІтРуРу
1026βp)	5'-W T G C A A W-3'	${\tt HpImPy-\beta-Py-\gamma-Hp-\beta-ImPyPy}$

	TABLE 77 (con	t): 10-ring Hairpin Polyamides for recogn	uition of 7-bp 5'-WTGSNNW-3' with β substitutions.
		DNA sequence	aromatic amino acid sequence
	1028β)	5'-W T G C A C W-3'	НрІтРуРуРу-ү-Іт-β-ІтРуР
5	1028βp) [.]	5'-W T G C A C W-3'	$ exttt{HpImPy-}eta- exttt{Py-}\gamma- exttt{Im-}eta- exttt{ImPyPy}$
	1029β)	5'-W T G C G T W-3'	$ exttt{HpIm-}eta exttt{-ImHp-}\gamma exttt{-Py-}eta exttt{-ImPyPy}$
	1030β)	5'-W T G C G A W-3'	$\mathtt{HpIm} ext{-}eta ext{-}\mathtt{ImPy} ext{-}\gamma ext{-}\mathtt{Hp} ext{-}eta ext{-}\mathtt{ImPyPy}$
	1031β)	5'-W T G C C T W-3'	HpImPyPyHp-y-PyImIm-β-Py
	1031βp)	5'-W T G C C T W-3'	${\tt HpImPy-}\beta{\tt -Hp-}\gamma{\tt -PyImIm-}\beta{\tt -Py}$
10	1032β)	5'-W T G C C A W-3'	${\tt HpImPyPyPy-\gamma-HpImIm-\beta-Py}$
	1032βp)	5'-W T G C C A W-3'	${ t HpImPy-eta-Py-\gamma-HpImIm-eta-Py}$
	1035β)	5'-W T G G C G W-3'	HpImIm-β-Im-γ-PyImPyPyPy
	1036β)	5'-W T G G C C W-3'	HpImIm-β-Py-γ-ImImPyPyPy
	1037β)	5'-W T G C G G W-3'	$\mathtt{HpIm} extsf{-}eta extsf{-}\mathtt{ImIm} extsf{-}\gamma extsf{-}\mathtt{Py} extsf{-}\beta extsf{-}\mathtt{ImPyPy}$.
15	1038β)	5'-W T G C G C W-3'	HpIm-β-ImPy-γ-Im-β-ImPyPy
	1039β)	5'-W T G C C G W-3'	HpIm-β-PyIm-γ-PyImIm-β-Py
	1040β)	5'-W T G C C C W-3'	HpImPyPyPy-γ-ImImIm-β-Py

_	TABLE 78: 1	10-ring Hairpin Polyamides for recognition	of 7-bp 5'-WTTWNNW-3' with β substitutions.
=	<u> </u>	NA sequence	aromatic amino acid sequence
	1043β)	5'-W T T T T G W-3'	НрНр-β-НрІm-γ-Руруруруру
5	1043βp) [.]	5'-W T T T G W-3'	НрНр-β-НрІm-γ-РуРу-β-РуРу
	1047β)	5'-W T T T A G W-3'	НрНр-β-РуІт-γ-РуНрРуРуРу
	1047 β p)	5'-W T T T A G W-3'	НрНр-β-РуІm-γ-РуНр-β-РуРу
	1049β)	5'-W T T T G T W-3'	\mathtt{HpHp} - β - \mathtt{ImHp} - γ - $\mathtt{PyPyPyPyPy}$
	$1049\beta p$)	5'-W T T T G T W-3'	\mathtt{HpHp} - β - \mathtt{ImHp} - γ - \mathtt{PyPy} - β - \mathtt{PyPy}
10	1050β)	5'-W T T T G A W-3'	НрНр-β-ІтРу-ү-НрРуРуРуРу
	1050 β p)	5'-W T T T G A W-3'	\mathtt{HpHp} - β - \mathtt{ImPy} - γ - \mathtt{HpPy} - β - \mathtt{PyPy}
	1051β)	5'-W T T T G G W-3'	НрНр-β-ІшІш-ү-РуРуРуРуРу
	1051 β p)	5'-W T T T G G W-3'	${\tt HpHp}\hbox{-}\beta\hbox{-}{\tt ImIm}\hbox{-}\gamma\hbox{-}{\tt PyPy}\hbox{-}\beta\hbox{-}{\tt PyPy}$
	1052β)	5'-W T T T G C W-3'	НрНр-β-ІтРу-ү-ІтРуРуРуРу
15	1052βp)	5'-W T T T G C W-3'	\mathtt{HpHp} - β - \mathtt{ImPy} - γ - \mathtt{ImPy} - β - \mathtt{PyPy}
	1055β)	5'-W T T T C G W-3'	НрНр-β-Руім-ү-РуімРуРуРу
	1055βp)	5'-W T T T C G W-3'	${ t HpHp}$ - ${ t B}$ - ${ t PyIm}$ - ${ t PyPy}$
	1059β)	5'-W T T A T G W-3'	НрНр-β-НрІm-γ-РуРуНрРуРу
	1059βp)	5'-W T T A T G W-3'	HрHр-β-HрIm-γ-РуРу-β-РуРу
20	1063β)	5'-W T T A A G W-3'	НрНр-β-РуІм-γ-РуНрНрРуРу
	1063βp)	5'-W T T A A G W-3'	НрНр-β-РуІт-ү-РуНр-β-РуРу
	1065β)	5'-W T T A G T W-3'	НрНр-β-ІπНр-γ-РуРуНрРуРу
	1065βp)	5'-W T T A G T W-3'	НрНр-β-ІшНр-ү-РуРу-β-РуРу
	1066β)	5'-W T T A G A W-3'	НрНр-β-ІтРу-ү-НрРуНрРуРу
25	1066βp)	5'-W T T A G A W-3'	НрНр-β-ІтРу-ү-НрРу-β-РуРу
	1067β)	5'-W T T A G G W-3'	НрНр-β-ІmІm-γ-РуРуНрРуРу
	1067βp)	5'-W T T A G G W-3'	НрНр-β-Ішіш-ү-РуРу-β-РуРу
	1068β)	5'-W T T A G C W-3'	НрНр-β-ІмРу-γ-ІмРуНрРуРу
	1068βp)	5'-W T T A G C W-3'	$HpHp-\beta-ImPy-\gamma-ImPy-\beta-PyPy$
30	1071β)	5'-W T T A C G W-3'	НрНр-β-РуІт-ү-РуІтНрРуРу
	1071 β p)	5'-W T T A C G W-3'	НрНр-β-РуІт-γ-РуІт-β-РуРу
			— -

	10-ring Hairpin Polyamides for recognition DNA sequence	n of 7-bp 5'-WTTSNNW-3' with β substitutions aromatic amino acid sequence
1073β)	5'-W T T G T T W-3'	Нр-β-ІmНрНр-γ-РуРуРуРуРу
	5'-W T T G T T W-3'	Нр-β-ІmНрНр-γ-РуРуРу-β-Ру
1074β)	5'-W T T G T A W-3'	Нр-β-ІmНpРy-γ-НpРyРyРyРy
1074βp)	5'-W T T G T A W-3'	Нр-β-ІмНрРу-γ-НрРуРу-β-Ру
1075β)	5'-W T T G T G W-3'	$Hp-\beta-ImHpIm-\gamma-PyPyPyPyPy$
1075βp)	5'-W T T G T G W-3'	$Hp-\beta-ImHpIm-\gamma-PyPyPy-\beta-Py$
1076 β)	5'-W T T G T C W-3'	$Hp-\beta-ImHpPy-\gamma-ImPyPyPyPy$
1076βp)	5'-W T T G T C W-3'	${\tt Hp}\hbox{-}\beta\hbox{-}{\tt Im}{\tt Hp}{\tt Py}\hbox{-}\gamma\hbox{-}{\tt Im}{\tt Py}{\tt Py}\hbox{-}\beta\hbox{-}{\tt Py}$
1077β)	5'-W T T G A T W-3'	Нр-β-ІπРуНр-γ-РуНрРуРуРу
1077 β p)	5'-W T T G A T W-3'	${\tt Hp}{\tt -}{eta}{\tt -}{\tt ImPyHp}{\tt -}{\gamma}{\tt -}{\tt PyHpPy}{\tt -}{eta}{\tt -}{\tt Py}$
1078β)	5'-W T T G A A W-3'	${\tt Hp-\beta-ImPyPy-\gamma-HpHpPyPyPy}$
1078βp)	5'-W T T G A A W-3'	${\tt Hp}{\tt -}{f \beta}{\tt -}{\tt ImPyPy}{\tt -}{\gamma}{\tt -}{\tt HpHpPy}{\tt -}{f \beta}{\tt -}{\tt Py}$
1079β)	5'-W T T G A G W-3'	${\tt Hp-\beta-ImPyIm-\gamma-PyHpPyPyPy}$
1079βp)	5'-W T T G A G W-3'	$Hp-\beta-ImPyIm-\gamma-PyHpPy-\beta-Py$
1080β)	5'-W T T G A C W-3'	${\tt Hp-\beta-ImPyPy-\gamma-ImHpPyPyPy}$
1080 β p)	5'-W T T G A C W-3'	${\tt Hp-\beta-ImPyPy-\gamma-ImHpPy-\beta-Py}$
1081β)	5'-W T T G G T W-3'	${\tt Hp}\hbox{-}\beta\hbox{-}{\tt ImImHp}\hbox{-}\gamma\hbox{-}{\tt PyPyPyPyPy}$
1081 β p)	5'-W T T G G T W-3'	${\tt Hp-\beta-ImImHp-\gamma-PyPyPy-\beta-Py}$
1082β)	5'-W T T G G A W-3'	${\tt Hp-\beta-ImImPy-\gamma-HpPyPyPyPy}$
1082βp)	5'-W T T G G A W-3'	${\tt Hp-\beta-ImImPy-\gamma-HpPyPy-\beta-Py}$
1083β)	5'-W T T G C T W-3'	${\tt Hp} - {f \beta} - {\tt ImPyHp} - {f \gamma} - {\tt PyImPyPyPy}$
1083βp)	5'-W T T G C T W-3'	${\tt Hp-\beta-ImPyHp-\gamma-PyImPy-\beta-Py}$
1084β)	5'-W T T G C A W-3'	· Hp-β-ImРуРу-γ-HpImРуРуРу
1084βp)	5'-W T T G C A W-3'	${\tt Hp}\hbox{-}\beta\hbox{-}{\tt ImPyPy}\hbox{-}\gamma\hbox{-}{\tt HpImPy}\hbox{-}\beta\hbox{-}{\tt Py}$
1085β)	5'-W T T G G G W-3'	${\tt Hp}$ - ${\tt B}$ - ${\tt ImImIm}$ - ${\tt \gamma}$ - ${\tt PyPyPyPyPyPy}$
1085βp)	5'-W T T G G G W-3'	${ t Hp}$ - ${ t \beta}$ - ${ t Im}$ ${ t Im}$ ${ t Im}$ ${ t Im}$ - ${ t Py}$ ${ t Py}$ ${ t Py}$ - ${ t Py}$
1086β)	5'-W T T G G C W-3'	Hp-β-ImImPy-γ-ImPyPyPyPy
1086βp)	5'-W T T G G C W-3'	${\tt Hp-\beta-ImImPy-\gamma-ImPyPy-\beta-Py}$
1087β)	5'-W T T G C G W-3'	${\tt Hp-\beta-ImPyIm-\gamma-PyImPyPyPy}$
1087βp)	5'-W T T G C G W-3'	Hp-β-ImPyIm-γ-PyImPy-β-Py

		DNA sequence	aromatic amino acid sequence
	1088β)	5'-W T T G C C W-3'	нр-β-іmРуРу-γ-іmІmРуРуРу
	1088βp)	5'-W T T G C C W-3'	${\tt Hp-\beta-ImPyPy-\gamma-ImImPy-\beta-Py}$
	1089β)	5'-W T T C T T W-3'	НрНрРуНрНр-γ-Ру-β-ImРуРу
	1089βp)	5'-W T T C T T W-3'	${\tt HpHpPy-}\beta{\tt -Hp-}\gamma{\tt -Py-}\beta{\tt -ImPyPy}$
	1090β)	5'-W T T C T A W-3'	НрНрРуНрРу-ү-Нр-β-ІтРуРу
	1090 $\beta_{ m p}$)	5'-W T T C T A W-3'	нрнрРу-β-Ру-ү-нр-β-іmРуРу
	1091β)	5'-W T T C T G W-3'	${\tt HpHp-\beta-HpIm-\gamma-Py-\beta-ImPyPy}$
	1092β)	5'-W T T C T C W-3'	${\tt HpHpPyHpPy-\gamma-Im-\beta-ImPyPy}$
	1092βp)	5'-W T T C T C W-3'	${\tt HpHpPy-\beta-Py-\gamma-Im-\beta-ImPyPy}$
	1093β)	5'-W T T C A T W-3'	НрНрРуРуНр-ү-Ру-β-ІмРуРу
	1093βp)	5'-W T T C A T W-3'	${\tt HpHpPy-}\beta{\tt -Hp-}\gamma{\tt -Py-}\beta{\tt -ImPyPy}$
	1094β)	5'-W T T C A A W-3'	НрНрРуРуРу-ү-Нр-β-ІмРуРу
	1094βp)	5'-W T T C A A W-3'	${\tt HpHpPy-\beta-Py-\gamma-Hp-\beta-ImPyPy}$
	1095β)	5'-W T T C A G W-3'	${\tt HpHp}\hbox{-}\beta\hbox{-}{\tt PyIm}\hbox{-}\gamma\hbox{-}{\tt Py}\hbox{-}\beta\hbox{-}{\tt ImPyPy}$
	1096 β)	5'-W T T C A C W-3'	${\tt HpHpPyPyPy-\gamma-Im-\beta-ImPyPy}$
	1096βp)	5'-W T T C A C W-3'	$HpHpPy-\beta-Py-\gamma-Im-\beta-ImPyPy$
•	1097β)	5'-W T T C G T W-3'	${\tt HpHp}\hbox{-}\beta\hbox{-}{\tt ImHp}\hbox{-}\gamma\hbox{-}{\tt Py}\hbox{-}\beta\hbox{-}{\tt ImPyPy}$
	1098β)	5'-W T T C G A W-3'	${\tt HpHp-\beta-ImPy-\gamma-Hp-\beta-ImPyPy}$
	1099β)	5'-W T T C C T W-3'	$HpHpPyPyHp-\gamma-PyImIm-\beta-Py$
	1099βp)	5'-W T T C C T W-3'	$Hp-\beta-PyPyHp-\gamma-PyImIm-\beta-Py$
	1100β)	5'-W T T C C A W-3'	${\tt HpHpPyPyPy-\gamma-HpImIm-\beta-Py}$
		5'-W T T C C A W-3'	${\tt Hp-\beta-PyPyPy-\gamma-HpImIm-\beta-Py}$
	1101β)	5'-W T T C G G W-3'	${\tt HpHp-\beta-ImIm-\gamma-Py-\beta-ImPyPy}$
	1102β)	5'-W T T C G C W-3'	${\tt HpHp-\beta-ImPy-\gamma-Im-\beta-ImPyPy}$
	1103β)	5'-W T T C C G W-3'	HpHp-β-PyIm-γ-PyImIm-β-Py

	DNA sequence	of 7-bp 5'-WTAWNNW-3' with β substitutions aromatic amino acid sequence
 1107β)	5'-W T A T T G W-3'	НрРу-β-НрІm-γ-РуРуРуНрРу
1107βp)	5'-W T A T T G W-3'	НрРу-β-НрІм-ү-РуРу-β-НрРу
1111β)	5'-W T A T A G W-3'	HpРy-β-РуІm-γ-РуНpРуНpРy
1111βp)	5'-W T A T A G W-3'	НрРу-β-РуІт-ү-РуНр-β-НрРу
1113β)	5'-W T A T G T W-3'	нрРу-β-ІmНр-γ-РуРуРуНрРу
1113βp)	5'-W T A T G T W-3'	НрРу-β-ІмНр-ү-РуРу-β-НрРу
1114β)	5'-W T A T G A W-3'	НрРу-β-ІмРу-ү-НрРуРуНрРу
1114βp)	5'-W T A T G A W-3'	НрРу-β-ІтРу-ү-НрРу-β-НрРу
1115β)	5'-W T A T G G W-3'	НрРу-β-Ішіш-ү-РуРуРуНрРу
1115βp)	5'-W T A T G G W-3'	HpРу-β-ІmІm-γ-РуРу-β-HpРу
1116β)	5'-W T A T G C W-3'	НрРу-β-ІтРу-ү-ІтРуРуНрРу
1116βp)	5'-W T A T G C W-3'	НрРу-β-ІтРу-у-ІтРу-β-НрРу
1119β)	5'-W T A T C G W-3'	НрРу-β-РуІт-ү-РуІтРуНрРу
1119βp)	5'-W T A T C G W-3'	НрРу-β-РуІт-ү-РуІт-β-НрРу
1123β)	5'-W T A A T G W-3'	НрРу-β-НрІт-ү-РуРуНрНрРу
1123βp)	5'-W T A A T G W-3'	НрРу-β-НрІт-ү-РуРу-β-НрРу
1127β)	5'-W T A A A G W-3'	HpРy-β-РуІm-γ-РуНрНpРP
1127βp)	5'-W T A A A G W-3'	НрРу-β-РуІт-ү-РуНр-β-НрРу
1129β)	5'-W T A A G T W-3'	НрРу-β-ImHp-γ-РуРуНрНрРу
1129βp)	5'-W T A A G T W-3'	$HpPy-\beta-ImHp-\gamma-PyPy-\beta-HpPy$
1130β)	5'-W T A A G A W-3'	НрРу-β-ІmРу-γ-НрРуНрНрРу
1130βp)	5'-W T A A G A W-3'	НрРу-β-ІтРу-ү-НрРу-β-НрРу
1131β)	5'-W T A A G G W-3'	НрРу-β-ІшІш-γ-РуРуНрНрРу
1131βp)	5'-W T A A G G W-3'	${ t HpPy-eta-ImIm-\gamma-PyPy-eta-HpPy}$
1132β)	5'-W T A A G C W-3'	НрРу-β-ІπРу-γ-ІπРуНрНрРу
1132βp)	5'-W T A A G C W-3'	НрРу-β-ІтРу-ү-ІтРу-β-НрРу
1135β)	5'-W T A A C G W-3'	НрРу-β-РуІт-γ-РуІтНрНрРу
1135βp)	5'-W T A A C G W-3'	HpPy-β-PyIm-γ-PyIm-β-HpPy

 TABLE 81: 1	0-ring Hairpin Polyamides for recogniti	ion of 7-bp 5'-WTASNNW-3' with β substitutions
	DNA sequence	aromatic amino acid sequence
1137β)	5'-W T A G T T W-3'	Нр-β-ІπНрНр-γ-РуРуРуНрРу
1137βp)	5'-W T A G T T W-3'	${\tt Hp-\beta-ImHpHp-\gamma-PyPyPy-\beta-Py}$
1138β)	5'-W T A G T A W-3'	${\tt Hp-\beta-ImHpPy-\gamma-HpPyPyHpPy}$
1138βp)	5'-W T A G T A W-3'	${\tt Hp}$ - ${\tt \beta}$ - ${\tt Im}$ ${\tt Hp}$ ${\tt Py}$ - ${\tt \gamma}$ - ${\tt Hp}$ ${\tt Py}$ ${\tt Py}$ - ${\tt \beta}$ - ${\tt Py}$
1139β)	5'-W T A G T G W-3'	${ t Hp}$ - ${ t B}$ - ${ t Im}$ ${ t Im}$ - ${ t P}$
1139βp)	5'-W T A G T G W-3'	${\tt Hp-\beta-ImHpIm-\gamma-PyPyPy-\beta-Py}$
1140β)	5'-W T A G T C W-3'	${\tt Hp}{\tt -}{f eta}{\tt -}{\tt Im}{\tt Hp}{\tt Py}{\tt -}{\gamma}{\tt -}{\tt Im}{\tt Py}{\tt Py}{\tt Hp}{\tt Py}$
1140 β p)	5'-W T A G T C W-3'	${\tt Hp-\beta-ImHpPy-\gamma-ImPyPy-\beta-Py}$
1141β)	5'-W T A G A T W-3'	Hp-β-ІmРуHp-γ-РуHpРуHpРу
1141 β p)	5'-W T A G A T W-3'	Нр-β-ІmРуНр-γ-РуНрРу-β-Ру
1142β)	5'-W T A G A A W-3'	Нр-β-ІmРуРу-ү-НрНрРуНрРу
1142 β p)	5'-W T A G A A W-3'	Hp-β-ІmРуРу-γ-HpHpРу-β-Ру
1143β)	5'-W T A G A G W-3'	Нр-β-ІmРуІm-γ-РуНрРуНрРу
1143 β p)	5'-W T A G A G W-3'	${\tt Hp} extsf{-}{f \beta} extsf{-}{\tt ImPyIm} extsf{-}{f \gamma} extsf{-}{\tt PyHpPy} extsf{-}{f \beta} extsf{-}{\tt Py}$
1144β)	5'-W T A G A C W-3'	Hp-β-ІmРуРу-γ-ІmНpРуНpРу
1144 β p)	5'-W T A G A C W-3'	нр-β-імРуРу-у-імНрРу-β-Ру
1145β)	5'-W T A G G T W-3'	${\tt Hp-\beta-ImImHp-\gamma-PyPyPyHpPy}$
1145 β p)	5'-W T A G G T W-3'	${\tt Hp-\beta-ImImHp-\gamma-PyPyPy-\beta-Py}$
1146β)	5'-W T A G G A W-3'	${ t Hp} - {eta} - { t Im} { t Im} { t Py} - {eta} - { t Hp} { t Py} { t Py} { t Py} { t Py}$
1146βp)	5'-W T A G G A W-3'	${ t Hp} - {eta} - { t Im} { t Im} { t Py} - {eta} - { t Hp} { t Py} { t Py} - {eta} - { t Py}$
1147β)	5'-W T A G C T W-3'	${ t Hp}$ - ${ t B}$ - ${ t Im}$ ${ t Py}$ ${ t Hp}$ - ${ t \gamma}$ - ${ t Py}$ ${ t Im}$ ${ t Py}$ ${ t Py}$
1147 β p)	5'-W T A G C T W-3'	${\tt Hp-\beta-ImPyHp-\gamma-PyImPy-\beta-Py}$
1148β)	5'-W T A G C A W-3'	Нр-β-ІmРуРу-γ-НрІmРуНрРу
1148βp)	5'-W T A G C A W-3'	${ t Hp} - {eta} - { t ImPyPy} - {\gamma} - { t Hp} { t ImPy} - {eta} - { t Py}$
1149β)	5'-W T A G G G W-3'	${ t Hp} - {f eta} - { t Im} { t Im} { t Im} - {f \gamma} - { t Py} { t Py} { t Py} { t Py} { t Py}$
1149 β p)	5'-W T A G G G W-3'	${ t Hp} - {eta} - { t Im} { t Im} { t Im} - {eta} - { t Py} { t Py} { t Py} - {eta} - { t Py}$
1150β)	5'-W T A G G C W-3'	${\tt Hp-\beta-ImImPy-\gamma-ImPyPyHpPy}$
1150βp)	5'-W T A G G C W-3'	${\tt Hp-\beta-ImImPy-\gamma-ImPyPy-\beta-Py}$
1151β)	5'-W T A G C G W-3'	$Hp-\beta-ImPyIm-\gamma-PyImPyHpPy$
1151 β p)	5'-W T A G C G W-3'	$ ext{Hp-}eta ext{-ImPyIm-}\gamma ext{-PyImPy-}eta ext{-Py}$

5=1.11	DNA sequence	aromatic amino acid sequence
1152β)	5'-W T A G C C W-3'	${\tt Hp-\beta-ImPyPy-\gamma-ImImPyHpPy}$
1152βp)	5'-W T A G C C W-3'	${\tt Hp-\beta-ImPyPy-\gamma-ImImPy-\beta-Py}$
1153β)	5'-W T A C T T W-3'	НрРуРуНрНр-γ-Ру-β-ІπНрРу
1153βp)	5'-W T A C T T W-3'	${\tt HpPyPy-\beta-Hp-\gamma-Py-\beta-ImHpPy}$
1154β)	5'-W T A C T A W-3'	${\tt HpPyPyHpPy-\gamma-Hp-\beta-ImHpPy}$
1154βp)	5'-W T A C T A W-3'	$ ext{HpPyPy-}eta ext{-Py-}\gamma ext{-Hp-}eta ext{-ImHpPy}$
1155β)	5'-W T A C T G W-3'	${ t HpPy-eta-HpIm-\gamma-Py-eta-ImHpPy}$
1156β)	5'-W T A C T C W-3'	нрРуРунрРу-γ-Іm-β-ІmНрРу
1156βp)	5'-W T A C T C W-3'	$ ext{HpPyPy-}eta ext{-Py-}\gamma ext{-Im-}eta ext{-ImHpPy}$
1157β)	5'-W T A C A T W-3'	НрРуРуРуНр-γ-Ру-β-ІπНрРу
1157βp)	5'-W T A C A T W-3'	НрРуРу-β-Нр-ү-Ру-β-ІтНрРу
1158β)	5'-W T A C A A W-3'	НрРуРуРуРу-γ-Нр-β-І mНр Р у
1158βp)	5'-W T A C A A W-3'	${ t HpPyPy-eta-Py-\gamma-Hp-eta-ImHpPy}$
1159β)	5'-W T A C A G W-3'	\mathtt{HpPy} - β - \mathtt{PyIm} - γ - \mathtt{Py} - β - \mathtt{ImHpPy}
1160β)	5'-W T A C A C W-3'	${ t HpPyPyPyPy-\gamma-Im-eta-ImHpPy}$
1160βp)	5'-W T A C A C W-3'	${\tt HpPyPy-\beta-Py-\gamma-Im-\beta-ImHpPy}$
1161β)	5'-W T A C G T W-3'	${\tt HpPy-\beta-ImHp-\gamma-Py-\beta-ImHpPy}$
1162β)	5'-W T A C G A W-3'	${\tt HpPy-\beta-ImPy-\gamma-Hp-\beta-ImHpPy}$
1163β)	5'-W T A C C T W-3'	${\tt HpPyPyPyHp-\gamma-PyImIm-\beta-Py}$
1163βp)	5'-W T A C C T W-3'	${\tt Hp-\beta-PyPyHp-\gamma-PyImIm-\beta-Py}$
1164β)	5'-W T A C C A W-3'	${\tt HpPyPyPyPy-\gamma-HpImIm-\beta-Py}$
1164βp)) 5'-W T A C C A W-3'	${\tt Hp}$ - ${\tt \beta}$ - ${\tt Py}$ ${\tt Py}$ ${\tt Py}$ - ${\tt \gamma}$ - ${\tt Hp}$ ${\tt Im}$ ${\tt Im}$ - ${\tt \beta}$ - ${\tt Py}$
1165β)	5'-W T A C G G W-3'	. \mathtt{HpPy} - β - \mathtt{ImIm} - γ - \mathtt{Py} - β - \mathtt{ImHpPy}
1166β)	5'-W T A C G C W-3'	${\tt HpPy-\beta-ImPy-\gamma-Im-\beta-ImHpPy}$
1167β)	5'-W T A C C G W-3'	${ t HpPy-eta-PyIm-\gamma-PyImIm-eta-Py}$

	TABLE 82:	10-ring Hairpin Polyamides for recognition	n of 7-bp 5'-WTCWNNW-3' with β substitutions
=	I	DNA sequence	aromatic amino acid sequence
	1170β)	5'-W T C T T A W-3'	НрРуНрНрРу-у-НрРу-β-ІтРу
	1170βp)	5'-W T C T T A W-3'	НрРу-β-НрРу-ү-НрРу-β-ІмРу
	1171β)	5'-W T C T T G W-3'	$HpPy-\beta-HpIm-\gamma-PyPy-\beta-ImPy$
	1172β)	5'-W T C T T C W-3'	НрРуНрНрРу-γ-ImРу-β-ImРу
	1172βp)	5'-W T C T T C W-3'	$\texttt{HpPy-}\beta ext{-}\texttt{HpPy-}\gamma ext{-}\texttt{ImPy-}\beta ext{-}\texttt{ImPy}$
	1173β)	5'-W T C T A T W-3'	НрРунрРунр-ү-Рунр-β-ІmРу
	1173 $\beta_{ m P}$)	5'-W T C T A T W-3'	НрРу-β-РуНр-ү-РуНр-β-ІтРу
	1174β)	5'-W T C T A A W-3'	НрРуНрРуРу-ү-НрНр-β-ІmРу
	1174 β p)	5'-W T C T A A W-3'	${ t HpPy-eta-{ t PyPy-\gamma-{ t HpHp-eta-{ t ImPy}}}$
	1175β)	5'-W T C T A G W-3'	$\texttt{HpPy-}\beta-\texttt{PyIm-}\gamma-\texttt{PyHp-}\beta-\texttt{ImPy}$
	1176 β)	5'-W T C T A C W-3'	$ { t HpPyHpPyPy-\gamma-ImHp-\beta-ImPy}$
	1176βp)	5'-W T C T A C W-3'	\mathtt{HpPy} - β - \mathtt{PyPy} - γ - \mathtt{ImHp} - β - \mathtt{ImPy}
	1177β)	5'-W T C T G T W-3'	${\tt HpPy-\beta-ImHp-\gamma-PyPy-\beta-ImPy}$
	1178β)	5'-W T C T G A W-3'	НрРу-β-ІmРу-γ-НрРу-β-ІmРу
	1179β)	5'-W T C T G G W-3'	${ t HpPy-eta-ImIm-\gamma-PyPy-eta-ImPy}$
	1180β)	5'-W T C T G C W-3'	${\tt HpPy-\beta-ImPy-\gamma-ImPy-\beta-ImPy}$
	1181β)	5'-W T C T C T W-3'	${ t HpPyHpPyHp-\gamma-PyIm-eta-ImPy}$
	1181 β p)	5'-W T C T C T W-3'	\mathtt{HpPy} - β - \mathtt{PyHp} - γ - \mathtt{PyIm} - β - \mathtt{ImPy}
	1182β)	5'-W T C T C A W-3'	НpРyНpРyРy-γ-HpIm-β-ImРy
	1182βp)	5'-W T C T C A W-3'	${\tt HpPy-\beta-PyPy-\gamma-HpIm-\beta-ImPy}$
	1183β)	5'-W T C T C G W-3'	HpPy-β-PyIm-γ-PyIm-β-ImPy
	1184β)	5'-W T C T C C W-3'	HpPyHpPyPy-y-ImIm-β-ImPy
	1184βp)	5'-W T C T C C W-3'	HpPy GPy PyPy Y ImIm GP ImPy
	1185β)	5'-W T C A T T W-3'	НрРуРуНрНр-ү-РуРу-β-ІтРу
	1185βp)	5'-W T C A T T W-3'	нрРу-β-НрНр-γ-РуРу-β-ІmРу
	1186β)	5'-W T C A T A W-3'	нрРуРуНрРу-ү-нрРу-β-іmРу
	1186βp)	5'-W T C A T A W-3'	нрРу-β-нрРу-ү-нрРу-β-1mРу
	1187β)	5'-W T C A T G W-3'	$\texttt{HpPy-}\beta-\texttt{HpIm-}\gamma-\texttt{PyPy-}\beta-\texttt{ImPy}$

	gnition of 7-bp 5'-WTCWNNW-3' with β substitut
DNA sequence	aromatic amino acid sequence
1188β) 5'-W T C A T C W-3'	${\tt HpPyPyHpPy-\gamma-ImPy-\beta-ImPy}$
1188βp) 5'-W T C A T C W-3'	${\tt HpPy-\beta-HpPy-\gamma-ImPy-\beta-ImPy}$
1189β) 5'-W T C A A T W-3'	нрРуРуРуНр-γ-РуНр-β-ImРy
1189βp) 5'-W T C A A T W-3'	$\texttt{HpPy-}\beta extstyle{-}\gamma extstyle{-}\gamma extstyle{-}\gamma + \texttt{PyHp-}\beta extstyle{-}1 extstyle{mPy}$
1190β) 5'-W T C A A A W-3'	$ ext{HpPyPyPyPy}-\gamma- ext{HpHp}-eta- ext{ImPy}$
1190βp) 5'-W T C A A A W-3'	${ t HpPy-eta-PyPy-\gamma-HpHp-eta-ImPy}$
1191β) 5'-W T C A A G W-3'	${\tt HpPy-\beta-PyIm-\gamma-PyHp-\beta-ImPy}$
1192β) 5'-W T C A A C W-3'	${\tt HpPyPyPyPy-\gamma-ImHp-\beta-ImPy}$
1192βp) 5'-W T C A A C W-3'	${\tt HpPy-\beta-PyPy-\gamma-ImHp-\beta-ImPy}$
1193β) 5'-W T C A G T W-3'	${\tt HpPy-\beta-ImHp-\gamma-PyPy-\beta-ImPy}$
1194β) 5'-W T C A G A W-3'	${\tt HpPy-\beta-ImPy-\gamma-HpPy-\beta-ImPy}$
1195β) 5'-W T C A G G W-3'	${\tt HpPy-\beta-ImIm-\gamma-PyPy-\beta-ImPy}$
1196β) 5'-W T C A G C W-3'	${\tt HpPy-\beta-ImPy-\gamma-ImPy-\beta-ImPy}$
1197β) 5'-W T C A C T W-3'	${\tt HpPyPyPyHp-\gamma-PyIm-\beta-ImPy}$
1197βp) 5'-W T C A C T W-3'	${\tt HpPy-\beta-PyHp-\gamma-PyIm-\beta-ImPy}$
1198β) 5'-W T C A C A W-3'	${\tt HpPyPyPyPy-\gamma-HpIm-\beta-ImPy}$
1198βp) 5'-W T C A C A W-3'	${\tt HpPy-\beta-PyPy-\gamma-HpIm-\beta-ImPy}$
1199β) 5'-W T C A C G W-3'	${\tt HpPy-\beta-PyIm-\gamma-PyIm-\beta-ImPy}$
1200β) 5'-W T C A C C W-3'	$ ext{HpPyPyPyPy-}\gamma ext{-} ext{ImIm-}\beta ext{-} ext{ImPy}$

_			gnition of 7-bp 5'-WTCSNNW-3' with β substitutions
=		DNA sequence	aromatic amino acid sequence
	1201β)	5'-W T C G T T W-3'	$\mathtt{Hp} extsf{-}eta extsf{-}\mathtt{Im}\mathtt{Hp}\mathtt{Hp} extsf{-}\gamma extsf{-}\mathtt{Py}\mathtt{Py} extsf{-}eta extsf{-}\mathtt{Im}\mathtt{Py}$
5	1202β)	5'-W T C G T A W-3'	${\tt Hp}\hbox{-}{\beta}\hbox{-}{\tt Im}{\tt HpPy}\hbox{-}{\gamma}\hbox{-}{\tt HpPy}\hbox{-}{\beta}\hbox{-}{\tt ImPy}$
	1203β)	5'-W T C G T G W-3'	${\tt Hp-\beta-ImHpIm-\gamma-PyPy-\beta-ImPy}$
	1204 β)	5'-W T C G T C W-3'	${\tt Hp-\beta-ImHpPy-\gamma-ImPy-\beta-ImPy}$
	1205β)	5'-W T C G A T W-3'	${\tt Hp}\hbox{-}{\beta}\hbox{-}{\tt ImPyHp}\hbox{-}{\gamma}\hbox{-}{\tt PyHp}\hbox{-}{\beta}\hbox{-}{\tt ImPy}$
	1206β)	5'-W T C G A A W-3'	${\tt Hp-\beta-ImPyPy-\gamma-HpHp-\beta-ImPy}$
10	1207β)	5'-W T C G A G W-3'	${\tt Hp}{\tt -}{eta}{\tt -}{\tt ImPyIm}{\tt -}{\gamma}{\tt -}{\tt PyHp}{\tt -}{eta}{\tt -}{\tt ImPy}$
	1208β)	5'-W T C G A C W-3'	${\tt Hp}{\tt -}{\beta}{\tt -}{\tt ImPyPy}{\tt -}{\gamma}{\tt -}{\tt ImHp}{\tt -}{\beta}{\tt -}{\tt ImPy}$
	1209β)	5'-W T C G G T W-3'	${\tt Hp} extsf{-}{f \beta} extsf{-}{\tt Im}{\tt Im}{\tt Hp} extsf{-}{\gamma} extsf{-}{\tt Py}{\tt Py} extsf{-}{f \beta} extsf{-}{\tt Im}{\tt Py}$
	1210β)	5'-W T C G G A W-3'	${\tt Hp}{\tt -}{eta}{\tt -}{\tt ImImPy}{\tt -}{\gamma}{\tt -}{\tt HpPy}{\tt -}{eta}{\tt -}{\tt ImPy}$
	1211β)	5'-W T C G C T W-3'	${\tt Hp}{\tt -}{\beta}{\tt -}{\tt ImPyHp}{\tt -}{\gamma}{\tt -}{\tt PyIm}{\tt -}{\beta}{\tt -}{\tt ImPy}$
15	1212β)	5'-W T C G C A W-3'	${\tt Hp}{\tt -}{eta}{\tt -}{\tt ImPyPy}{\tt -}{\gamma}{\tt -}{\tt Hp}{\tt Im}{\tt -}{eta}{\tt -}{\tt ImPy}$
	1213β)	5'-W T C C T T W-3'	${\tt HpPyPyHpHp-\gamma-Py-\beta-ImImPy}$
	1213βp)	5'-W T C C T T W-3'	${\tt HpPyPy-\beta-Hp-\gamma-Py-\beta-ImImPy}$
	1214 β)	5'-W T C C T A W-3'	${\tt HpPyPyHpPy-\gamma-Hp-\beta-ImImPy}$
	1214βp)	5'-W T C C T A W-3'	${\tt HpPyPy-\beta-Py-\gamma-Hp-\beta-ImImPy}$
20	1215β)	5'-W T C C T G W-3'	${\tt HpPy-\beta-HpIm-\gamma-Py-\beta-ImImPy}$
	1216β)	5'-W T C C T C W-3'	${\tt HpPyPyHpPy-\gamma-Im-\beta-ImImPy}$
	1216 β p)	5'-W T C C T C W-3'	${\tt HpPyPy-\beta-Py-\gamma-im-\beta-imimPy}$
	1217β)	5'-W T C C A T W-3'	${\tt HpPyPyPyHp-\gamma-Py-\beta-ImImPy}$
	1217βp)	5'-W T C C A T W-3'	${\tt HpPyPy-\beta-Hp-\gamma-Py-\beta-ImImPy}$
25	1218β)	5'-W T C C A A W-3'	${\tt HpPyPyPyPy-\gamma-Hp-\beta-ImImPy}$
	1218βp)	5'-W T C C A A W-3'	\mathtt{HpPyP} - β - \mathtt{Py} - γ - \mathtt{Hp} - β - \mathtt{ImImPy}
	1219β)	5'-W T C C A G W-3'	${\tt HpPy-\beta-PyIm-\gamma-Py-\beta-ImImPy}$
	1220β)	5'-W T C C A C W-3'	${\tt HpPyPyPyPy-\gamma-Im-\beta-ImImPy}$
	1220βp)	5'-W T C C A C W-3'	${\tt HpPyPy-\beta-Py-\gamma-Im-\beta-ImImPy}$
30	1221β)	5'-W T C C G T W-3'	${\tt HpPy-\beta-ImHp-\gamma-Py-\beta-ImImPy}$
	1222β)	5'-W T C C G A W-3'	${\tt HpPy-\beta-ImPy-\gamma-Hp-\beta-ImImPy}$
	1225 β)	5'-W T C G G G W-3'	${\tt Hp-\beta-ImImIm-\gamma-PyPy-\beta-ImPy}$

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	TABLE 83 (co	ont): 10-ring Hairpin Polyami	ides for recognition of 7-bp 5'-WTCSNNW-3' with β substitutions
_		DNA sequence	aromatic amino acid sequence
	1226β)	5'-W T C G G C W-	3' Hp-β-ImImPy-γ-ImPy-β-ImPy
	1227β)	5'-W T C G C G W-	3' Hp-β-ImPyIm-γ-PyIm-β-ImPy
	1228β)	5'-W T C G C C W-	3 • Hp- β -ImPyPy- γ -ImIm- β -ImPy
	1229β)	5'-W T C C G G W-	3 HpPy- β -ImIm- γ -Py- β -ImImPy
	1230β)	5'-W T C C G C W-	3' HpPy-β-ImPy-γ-Im-β-ImImPy
	1231β)	5'-W T C C C G W-	HpPy-β-PyIm-γ-PyImImImPy

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If the process described above of designing a preferred polyamide molecule comprising four or five carboxamide binding pairs does not produce a selective polyamide that binds to the target identified DNA sequence with subnanomolar affinity and with a selectivity over mismatch sequences of greater than a factor of ten, a polyamide molecule

X₁X₂X₃X₄X₅X₆-γ-X₇X₈X₉X₁₀X₁₁X₁₂ having six carboxamide binding pairs can be designed that is selective for an eight base pair identified target 5'-WNNNNNW-3' sequence. The design and synthesis of six binding pair polyamides is essentially the same as that of the four and five binding pair polyamides described above.

The polyamide design process for six carboxamide binding pair polyamides is shown schematically in Figure 10 A and the upper half of 10B. The method for chosing the residues that can be replaced by a β-alanine residue is shown schematically in the lower half of Figure 10 B and in Figure 11. The 1024 possible 12-ring hairpins which target the 1024 5'-GNNNNN-3' core sequences are listed in Tables 84-115. Each DNA sequence entry can be correlated to its corresponding polyamide recognition sequence using the process outlined in this figure. The 1024 possible 12-ring hairpins which target the 1024 5'-CNNNNN-3' core sequences are listed in Tables 116-147. Each DNA sequence entry can be correlated to its corresponding polyamide recognition sequence using the process outlined in this figure.

Figure 11 shows a process for replacement of aromatic amino acid residues with aliphatic β -alanine 'spring' residues in order to enhance the DNA binding properties of 12-ring hairpin polyamides. Selective placement of an aliphatic β -alanine (β) residue paired side-by-side with either a pyrrole (Py) or imidazole (Im) aromatic amino acid or another β -alanine residue is found

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to compensate for sequence composition effects for recognition of the minor groove of DNA by hairpin pyrrole-imidazole polyamides. If an all-ring polyamide has been found to have an affinity which is not subnanomolar, or a specificity versus mismatch sequences which is less than 10-fold it may be caused by DNA sequence-composition effects which can be tuned out by replacement of an aromatic amino acid with an aliphatic β -alanine spring. Rules have been determined to help determine the exact placement of the β -spring residues. For example, within the 12-ring template, it is only beneficial to place β -alanine within positions X_2 , X_3 , X_4 , X_5 , X_8 , X_9 , and X_{10} X_{11} . No more than two β -alanine residues may be placed within a single hairpin structure. No more than a single β -residue may be placed within each individual polyamide subunit. Tables 148-1079 list derivatives of sequences (1233-2224) labeled (1223 β -2224 β) which contain two β -alanine residues assigned according to the process outlined in Figure 11A & B.

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	T.	ABLE 84: 12-ring Hairpin Polyamides for re	cognition of 8-bp 5'-WGGGWNNW-3'
T		DNA sequence	aromatic amino acid sequence
	1233)	5'-W G G G T T T W-3'	${\tt ImImImHpHpHp-\gamma-PyPyPyPyPyPyPy}$
5	1234)	5'-W G G G T T A W-3'	ImImImHpHpPy-y-HpPyPyPyPyPy
	1235)	5'-W G G G T T G W-3'	ImImImHpHpIm-y-PyPyPyPyPyPy
	1236)	5'-W G G G T T C W-3'	ImImImHpHpPy-y-ImPyPyPyPyPy
	1237)	5'-W G G G T A T W-3	ІтІшттррунр-ү-РунрРуРуРуРу
	1238)	5'-W G G G T A A W-3'	ImImImHpPyPy-y-HpHpPyPyPyPy
10	1239)	5'-W G G G T A G W-3'	ImImImHpPyIm-7-PyHpPyPyPyPy
	1240)	5'-W G G G T A C W-3'	ІшІшШрРуРу-ү-ІшНрРуРуРуРу
	1241)	5'-W G G G T G T W-3'	ImImImHpImHp-y-PyPyPyPyPyPy
	1242)	5'-W G G G T G A W-3'	ImImImHpImPy-7-HpPyPyPyPyPy
	1243)	5'-W G G G T G G W-3'	ImImImHpImIm-y-PyPyPyPyPyPy
15	1244)	5'-W G G G T G C W-3'	ImImImHpImPy-y-ImPyPyPyPyPy
	1245)	5'-W G G G T C T W-3'	ImImImHpPyHp-y-PyImPyPyPyPy
	1246)	5'-W G G G T C A W-3'	ImImImHpPyPy-y-HpImPyPyPyPy
	1247)	5'-W G G G T C G W-3'	ImImImHpPyIm-7-PyImPyPyPyPy
	1248)	5'-W G G G T C C W-3'	ImImImHpPyPy-y-ImImPyPyPyPy
20	1249)	5'-W G G G A T T W-3'	ImImImPyHpHp-7-PyPyHpPyPyPy
	1250)	5'-W G G G A T A W-3'	ImImImPyHpPy-7-HpPyHpPyPyPy
	1251)	5'-W G G G A T G W-3'	${\tt ImImImPyHpIm-}\gamma\hbox{-}{\tt PyPyHpPyPyPy}$
	1252)	5'-W G G G A T C W-3'	ImImImPyHpPy-7-ImPyHpPyPyPy
	1253)	5'-W G G G A A T W-3'	ImImImPyPyHp-7-PyHpHpPyPyPy
25	1254)	5'-W G G G A A A W-3'	ImImImPyPyPy-y-HpHpHpPyPyPy
	1255)	5'-W G G G A A G W-3'	ImImImPyPyIm-7-PyHpHpPyPyPy
	1256)	5'-W G G G A A C W-3'	ImImImPyPyPy-7-ImHpHpPyPyPy
	1257)	5'-W G G G A G T W-3'	ImImImPyImHp-y-PyPyHpPyPyPy
	1258)	5'-W G G G A G A W-3'	ImImImPyImPy-7-HpPyHpPyPyPy
30	1259)	5'-W G G G A G G W-3'	ImImImPyImIm-y-PyPyHpPyPyPy
	1260)	5'-W G G G A G C W-3'	ImImImPyImPy-y-ImPyHpPyPyPy
	1261)	5'-W G G G A C T W-3'	ImImImPyPyHp-7-PyImHpPyPyPy
	1262)	5'-W G G G A C A W-3'	ImImImPyPyPy-y-HpImHpPyPyPy
	1263)	5'-W G G G A C G W-3'	ImImImPyPyIm-y-PyImHpPyPyPy
35	1264)	5'-W G G G A C C W-3'	ImImImPyPyPy-y-ImImHpPyPyPy

		TABLE 85: 12-ring Hairpin Polyamides for re	ecognition of 8-bp 5'-WGGGSNNW-3'
		DNA sequence .	aromatic amino acid sequence
	1265)	5'-W G G G G T T W-3'	Ітітітітірір-ү-Руруруруруру
	1266)	5'-W G G G G T A W-3'	ImImImImHpPy-ү-HpPyPyPyPyPy
5	1267)	5'-W G G G G T G W-3'	ImImImImHpIm- γ-РуРуРуРуРуРу
	1268)	5'-W G G G G T C W-3'	ImImImImHpPy- γ-ImРуРуРуРуРу
	1269)	5'-W G G G G A T W-3'	ImImImImPyHp- γ-РуНрРуРуРуРу
	1270)	5'-W G G G G A A W-3'	ImImImПmРуРу-ү-НpНpРуРуРуРу
	1271)	5'-W G G G G A G W-3'	ImImImPyIm-y-PyHpPyPyPyPy
10	1272)	5'-W G G G G A C W-3'	ImImImImPyPy-y-ImHpPyPyPyPy
	1273)	5'-W G G G G G T W-3'	Ітітітітітір-ү-РуРуРуРуРуРу
	1274)	5'-W G G G G G A W-3'	ІтІшшшшы ү-ү-НрРуРуРуРуРу
	1275)	5'-W G G G G C T W-3'	ІтІпІтТтРунр-ү-РуІтРуРуРуРу
	1276)	5'-W G G G G C A W-3'	Ітітіттүрүү-ү-Нрітруруруру
15	1277)	5'-W G G G C T T W-3'	ІтІшыты тары Ішыны
	1278)	5'-W G G G C T A W-3'	ІшІшшы Тараты Та
	1279)	5'-W G G G C T G W-3'	ImImImPyHpIm-γ-PyPyImPyPyPy
	1280)	5'-W G G G C T C W-3'	Ітіттрунрру-ү-ітруітруруру
	1281)	5'-W G G G C A T W-3'	ІтІпІтРуРуНр-ү-РуНрІтРуРуРу
20	1282)	5'-W G G G C A A W-3'	Ітіттруруру-ү-НрНрітруруру
	1283)	5'-W G G G C A G W-3'	ImImImPyPyIm-7-PyHpImPyPyPy
	1284)	5'-W G G G C A C W-3'	ImImImPyPyPy-y-ImHpImPyPyPy
	1285)	5'-W G G G C G T W-3'	ImImImPyImHp-y-PyPyImPyPyPy
	1286)	5'-W G G G C G A W-3'	ImImImPyImPy-7-HpPyImPyPyPy
25	1287)	5'-W G G G C C T W-3'	ImImImPyPyHp-7-PyImImPyPyPy
	1288)	5'-W G G G C C A W-3'	imImImPyPyPy-γ-HpImImPyPyPy
	G49)	5'-W G G G G G W-3'	ImImImImIm-y-PyPyPyPyPyPy
	G50)	5'-W G G G G C W-3'	ImImImImPy-7-ImPyPyPyPyPy
	G51)	5'-W G G G G C G W-3'	ImImImPyIm-7-PyImPyPyPyPy
30	G52)	5'-W G G G G C C W-3'	ImImImPyPy-y-ImImPyPyPyPy
	G53)	5'-W G G G C G G W-3'	ImImImPyImIm-y-PyPyImPyPyPy
	G54)	5'-W G G G C G C W-3'	ImImImPyImPy-7-ImPyImPyPyPy
	G55)	5'-W G G G C C G W-3'	ImImImPyPyIm-7-PyImImPyPyPy
	G56)	5'-W G G G C C C W-3'	ImImImPyPyPy-7-ImImImPyPyPy

	T.	ABLE 86: 12-ring Hairpin Polyamides for re	ecognition of 8-bp 5'-WGGTWNNW-3'
		DNA sequence	aromatic amino acid sequence
	1289)	5'-W G G T T T T W-3'	ІтІтрнрнрнр-ү-Руруруруруру
5	1290)	5"-W G G T T T A W-3'	ІтІмНрНрНрРу-ү-НрРуРуРуРуРу
	1291)	5'-W G G T T T G W-3'	ІтІтрнрнріт-ү-Руруруруруру
	1292)	5'-W G G T T T C W-3'	Ітітнрнрнрру-ү-Ітруруруруру
	1293)	5'-W G G T T A T W-3'	ІтІМНрНрРуНр-ү-РуНрРуРуРуРу
	1294)	5'-W G G T T A A W-3'	ІшІшНрНрРуРу-ү-НрНрРуРуРуРу
10	1295)	5'-W G G T T A G W-3'	ІшІшНрНрРуІш-ү-РуНрРуРуРуРу
	1296)	5'-W G G T T A C W-3'	Ітітіт Руру-ү-Ітір Руруруру
	1297)	5'-W G G T T G T W-3'	ImImHpHpImHp-y-PyPyPyPyPyPy
	1298)	5'-W G G T T G A W-3'	ImImHpHpImPy-ү-HpPyPyPyPyPy
	1299)	5'-W G G T T G G W-3'	ImImHpHpImIm-y-PyPyPyPyPyPyPy
15	1300)	5'-W G G T T G C W-3'	ImImHpHpImPy-y-ImPyPyPyPyPy
	1301)	5'-W G G T T C T W-3'	ImImHpHpPyHp-ү-РуImРуРуРуРу
	1302)	5'-W G G T T C A W-3'	${\tt ImImHpHpPyPy-\gamma-HpImPyPyPyPy}$
	1303)	5'-W G G T T C G W-3'	ImImHpHpPyIm-y-PyImPyPyPyPy
	1304)	5'-W G G T T C C W-3'	ImImHpHpPyPy-y-ImImPyPyPyPy
20	1305)	5'-W G G T A T T W-3'	ImImHpРуНpНp-ү-РуРуНpРуРуРу
	1306)	5'-W G G T A T A W-3'	ІшІшНрБАНББА-4-НББАНББА
	1307)	5'-W G G T A T G W-3'	ІтітнрРунріт-ү-РуРунрРуРуРу
	1308)	5'-W G G T A T C W-3'	ImImHpPyHpPy-y-ImPyHpPyPyPy
	1309)	5'-W G G T A A T W-3'	ІтІт Іт
25	1310)	5'-W G G T A A A W-3'	Ітітітрруруру-ү-нрнррруруру
	1311)	5'-W G G T A A G W-3'	ImImHpРуРуIm-ү-РуНрНpРуРуРу
	1312)	5'-W G G T A A C W-3'	ImImHpPyPyPy-y-ImHpHpPyPyPy
	1313)	5'-W G G T A G T W-3'	ImImHpPyImHp-ү-РуРуНpРуРуРу
	1314)	5'-W G G T A G A W-3'	ImImHpPyImPy-7-HpPyHpPyPyPy
30	1315)	5'-W G G T A G G W-3'	ImImHpPyImIm-y-PyPyHpPyPyPy
	1316)	5'-W G G T A G C W-3'	ImImHpPyImPy-y-ImPyHpPyPyPy
	1317)	5'-W G G T A C T W-3'	${\tt ImImHpPyPyHp-\gamma-PyImHpPyPyPy}$
	1318)	5'-W G G T A C A W-3'	ImImHpPyPyPy-y-HpImHpPyPyPy
	1319)	5'-W G G T A C G W-3'	ImImHpPyPyIm-y-PyImHpPyPyPy
35	1320)	5'-W G G T A C C W-3'	ImImHpPyPyPy-y-ImImHpPyPyPy

	7	TABLE 87: 12-ring Hairpin Polyamides for r	
		DNA sequence	aromatic amino acid sequence
	1321)	5'-W G G T G T T W-3'	ІмІмНрІмНрНр-ү-РуРуРуРуРуРу
	1322)	5'-W G G T G T A W-3'	ІшІшНрІшНрРу-ү-НрРуРуРуРуРу
	1323)	5'-W G G T G T G W-3'	Ішішнышныш-ү-БүБүБүБүБүБү
	1324)	5'-W G G T G T C W-3'	ІшІшНрІшНрРу-ү-ІшРуРуРуРуРу
	1325)	5'-W G G T G A T W-3'	Ішішнрішьунр-ү-рунрьуруруру
	1326)	5'-W G G T G A A W-3'	ImImHpImРуРу-ү-НpНpРуРуРуРу
	1327)	5'-W G G T G A G W-3'	Ітітрітруіт-ү-РунрРуРуРуРу
	1328)	5'-W G G T G A C W-3'	Ітітнрітруру-ү-ітнрруруруру
	1329)	5'-W G G T G G T W-3'	ІмІмНрІмІмНр-ү-РуРуРуРуРуРу
	1330)	5'-W G G T G G A W-3'	ImImHpImImPy- γ- HpPyPyPyPyPy
	1331)	5'-W G G T G C T W-3'	ImImHpImРуНр-γ-РуІmРуРуРуРу
	1332)	5'-W G G T G C A W-3'	ІшІшНрІшБуБу-ү-НрІшБуБуБуБу
	1333)	5'-W G G T G G G W-3'	ImImHpImImIm-γ-РуРуРуРуРуРу
	1334)	5'-W G G T G G C W-3'	Ітітрітітру-ү-Ітруруруруру
	1335)	5'-W G G T G C G W-3'	Ітітрітруіт-ү-Руітруруруру
	1336)	5'-W G G T G C C W-3'	ІмІмНрІмРуРу-ү-ІмІмРуРуРуРу
·. ·	1337)	5'-W G G T C T T W-3'	ІмІмНрРуНрНр-ү-РуРуІмРуРуРу
	1338)	5'-W G G T C T A W-3'	ІмІмНрРуНрРу-ү-НрРуІмРуРуРу
	1339)	5'-W G G T C T G W-3'	Ітітіррунріт-ү-Руруітруруру
	1340)	5'-W G G T C T C W-3'	Ітітррунрру-ү-Ітруітруруру
	1341)	5'-W G G T C A T W-3'	Ітітррурунр-ү-Рунрітруруру
	1342)	5'-W G G T C A A W-3'	ІмІмНрРуРуРу-ү-НрНрІмРуРуРу
	1343)	5'-W G G T C A G W-3'	ImImHpPyPyIm-y-PyHpImPyPyPy
	1344)	5'-W G G T C A C W-3'	Ітітрруруру-ү-ітрітруруру
	1345)	5'-W G G T C G T W-3'	ImImHpРyImHp-γ-РуРуІmРуРуРу
	1346)	5'-W G G T C G A W-3'	ImImHpPyImPy-ү-HpPyImPyPyPy
	1347)	5'-W G G T C C T W-3'	ImImHpРуРуНр-γ-РуІmІmРуРуРу
	1348)	5'-W G G T C C A W-3'	ImImHpРyРуРу-ү-HpImImРуРуРу
	1349)	5'-W G G T C G G W-3'	ImImHpPyImIm-y-PyPyImPyPyPy
	1350)	5'-W G G T C G C W-3'	ImImHpPyImPy-7-ImPyImPyPyPy
	1351)	5'-W G G T C C G W-3'	ImImHpPyPyIm-y-PyImImPyPyPy
	1352)	5'-W G G T C C C W-3'	ImImHpPyPyPy-y-ImImImPyPyPy

DNA sequence aromatic amino acid sequence 1353) 5'-W G G A T T T W-3' ImImPyHpHpHp-γ-PyPyPyHpPyPy 1354) 5'-W G G A T T A W-3' ImImPyHpHpHp-γ-PyPyPyHpPyPy 1355) 5'-W G G A T T G W-3' ImImPyHpHpHp-γ-PyPyPyHpPyPy 1356) 5'-W G G A T T C W-3' ImImPyHpHpHpγ-γ-ImPyPyHpPyPy 1357) 5'-W G G A T A T W-3' ImImPyHpPyPy-γ-ImPyPyHpPyPy 1358) 5'-W G G A T A A W-3' ImImPyHpPyPy-γ-PyHpPyHpPyPy 1359) 5'-W G G A T A G W-3' ImImPyHpPyPy-γ-ImHpPyHpPyPy 1360) 5'-W G G A T A C W-3' ImImPyHpPyPy-γ-ImHpPyHpPyPy 1361) 5'-W G G A T G T W-3' ImImPyHpImPγ-γ-PyPyPyHpPyPy 1362) 5'-W G G A T G G W-3' ImImPyHpImPγ-γ-PyPyPyHpPyPy 1363) 5'-W G G A T G C W-3' ImImPyHpImPγ-γ-ImPyPyHpPyPy 1365) 5'-W G G A T C C W-3' ImImPyHpPyPy-γ-ImPyHpPyPy 1366) 5'-W G G A T C C W-3' ImImPyHpPyPy-γ-ImImPyHpPyPy 1367) 5'-W G G A T C C W-3' ImImPyHpPyPy-γ-ImImPyHpPyPy 1368) 5'-W G G A T C C W-3' ImImPyHpPyPy-γ-ImPyHpPyPy 1370) 5'-W G G A T C C W-3' ImImPyHpPyPy-γ-ImPyHpPyPy 1371) 5'-W G G A A T A W-3' ImImPyPyHpPy-γ-PyPyHpHpPyPy 1371) 5'-W G G A A T G W-3' ImImPyPyHpPy-γ-PyPyHpHpPyPy 1371) 5'-W G G A A T G W-3' ImImPyPyHpPy-γ-PyPyHpHpPyPy 1371) 5'-W G G A A T C W-3' ImImPyPyHpPy-γ-PyPyHpHpPyPy 1371) 5'-W G G A A T C W-3' ImImPyPyHpPy-γ-PyPyHpHpPyPy 1372) 5'-W G G A A T C W-3' ImImPyPyHpPy-γ-PyPyHpHpPyPy 1373 ImimPyPyHpIm-γ-PyPyHpHpPyPy 1374) 5'-W G G A A T C W-3' ImImPyPyHpPy-γ-ImPyHpPyPyPy 1375) 5'-W G G A A T C W-3' ImImPyPyHpPy-γ-ImPyHpPyPyPy 1371) 5'-W G G A A T C W-3' ImImPyPyHpPy-γ-ImPyHpPyPyPy 1372) 5'-W G G A A T C W-3' ImImPyPyHpPy-γ-ImPyHpPyPyPy 1372) 5'-W G G A A T C W-3' ImImPyPyHpPy-γ-ImPyHpPyPyPy 1372) 5'-W G G A A T C W-3' ImImPyPyHpPy-γ-ImPyHpPyPyPy 1372) 5'-W G G A A T C W-3' ImImPyPyHpPy-γ-ImPyHpPyPyPy 1372) 5'-W G G A A T C W-3' ImImPyPyHpPy-γ-ImPyHpPyPyPy 1372) 5'-W G G A A T C W-3' ImImPyPyHpPy-γ-ImPyHpPyPyPy	
1354) 5'-W G G A T T A W-3' ImImPyHpHpPyPy-γ-HpPyPyHpPyPy 1355) 5'-W G G A T T G W-3' ImImPyHpHpHpPy-γ-HpPyPyHpPyPy 1356) 5'-W G G A T T C W-3' ImImPyHpHpPyPγ-γ-ImPyPyHpPyPy 1357) 5'-W G G A T A T W-3' ImImPyHpHpPyPγ-γ-PyHpPyPyPy 1358) 5'-W G G A T A A W-3' ImImPyHpPyPy-γ-HpHpPyPyPy 1359) 5'-W G G A T A G W-3' ImImPyHpPyPy-γ-HpHpPyPyPy 1360) 5'-W G G A T A C W-3' ImImPyHpPyPy-γ-ImHpPyHpPyPy 1361) 5'-W G G A T G T W-3' ImImPyHpImPy-γ-PyPyPyHpPyPy 1362) 5'-W G G A T G G W-3' ImImPyHpImPy-γ-HpPyPyPyPy 1363) 5'-W G G A T G G W-3' ImImPyHpImPy-γ-ImPyPyPyPyPy 1364) 5'-W G G A T C T W-3' ImImPyHpImPy-γ-ImPyPyPyPyPy 1365) 5'-W G G A T C T W-3' ImImPyHpPyPy-γ-ImPyPyPyPy 1366) 5'-W G G A T C G W-3' ImImPyHpPyPy-γ-PyImPyHpPyPy 1367) 5'-W G G A T C G W-3' ImImPyHpPyPy-γ-PyImPyHpPyPy 1368) 5'-W G G A T C C W-3' ImImPyHpPyPy-γ-PyImPyHpPyPy 1369) 5'-W G G A T C C W-3' ImImPyHpPyPy-γ-PyPyHpPyPyPy 1370) 5'-W G G A T C C W-3' ImImPyPyPyPy-γ-PyPyHpPyPyPy 1371) 5'-W G G A A T A W-3' ImImPyPyHpPy-γ-PyPyHpPyPyPy 1371) 5'-W G G A A T G W-3' ImImPyPyHpPy-γ-PyPyHpHpPyPy 1371) 5'-W G G A A T G W-3' ImImPyPyHpPy-γ-PyPyHpHpPyPy 1371) 5'-W G G A A T G W-3' ImImPyPyHpPy-γ-PyPyHpHpPyPy 1371) 5'-W G G A A T G W-3' ImImPyPyHpPy-γ-PyPyHpHpPyPy 1371) 5'-W G G A A T G W-3' ImImPyPyHpPy-γ-PyPyHpHpPyPy 1371) 5'-W G G A A T G W-3' ImImPyPyHpPy-γ-PyPyHpHpPyPy 1371) 5'-W G G A A T G W-3' ImImPyPyHpIm-γ-PyPyHpHpPyPy 1371) 5'-W G G A A T G W-3' ImImPyPyHpIm-γ-PyPyHpHpPyPy	
1355) 5'-W G G A T T G W-3' ImImPyHpHpIm-γ-PyPyPyHpPyPy 1356) 5'-W G G A T T C W-3' ImImPyHpHpPy-γ-ImPyPyHpPyPy 1357) 5'-W G G A T A T W-3' ImImPyHpPyPy-γ-ImPyPyHpPyPy 1358) 5'-W G G A T A A W-3' ImImPyHpPyPy-γ-HpHpPyHpPyPy 1358) 5'-W G G A T A G W-3' ImImPyHpPyPy-γ-HpHpPyHpPyPy 1360) 5'-W G G A T A C W-3' ImImPyHpPyPy-γ-ImHpPyHpPyPy 1361) 5'-W G G A T G T W-3' ImImPyHpImPy-γ-PyPyPyHpPyPy 1362) 5'-W G G A T G G W-3' ImImPyHpImPy-γ-HpPyPyHpPyPy 1363) 5'-W G G A T G G W-3' ImImPyHpImPy-γ-HpPyPyHpPyPy 1364) 5'-W G G A T G C W-3' ImImPyHpImPy-γ-ImPyPyHpPyPy 1365) 5'-W G G A T C T W-3' ImImPyHpImPy-γ-ImPyPyHpPyPy 1366) 5'-W G G A T C G W-3' ImImPyHpPyPy-γ-HpImPyHpPyPy 1367) 5'-W G G A T C C W-3' ImImPyHpPyPy-γ-HpImPyHpPyPy 1368) 5'-W G G A T C C W-3' ImImPyHpPyPy-γ-ImImPyHpPyPy 1369) 5'-W G G A T C C W-3' ImImPyHpPyPy-γ-ImImPyHpPyPy 1370) 5'-W G G A A T T W-3' ImImPyHpPyPy-γ-ImImPyHpPyPy 1371) 5'-W G G A A T A W-3' ImImPyPyHpHp-γ-PyPyHpHpPyPy 1371) 5'-W G G A A T A W-3' ImImPyPyHpHp-γ-PyPyHpHpPyPy 1371) 5'-W G G A A T A W-3' ImImPyPyHpHp-γ-PyPyHpHpPyPy 1371) 5'-W G G A A T A W-3' ImImPyPyHpHp-γ-PyPyHpHpPyPy	
1356) 5'-W G G A T T C W-3' ImImPyHpHpPy-γ-ImPyPyHpPyPy 1357) 5'-W G G A T A T W-3' ImImPyHpPyPy-γ-ImPyPyHpPyPy 1358) 5'-W G G A T A A W-3' ImImPyHpPyPy-γ-PyHpPyHpPyPy 1359) 5'-W G G A T A G W-3' ImImPyHpPyPy-γ-ImPyPyHpPyPy 1360) 5'-W G G A T G T W-3' ImImPyHpPyPy-γ-ImPyPyPyPy 1361) 5'-W G G A T G G W-3' ImImPyHpImPy-γ-PyPyPyHpPyPy 1362) 5'-W G G A T G G W-3' ImImPyHpImPy-γ-PyPyPyPyPyPy 1363) 5'-W G G A T G C W-3' ImImPyHpImPy-γ-ImPyPyPyPyPyPy 1365) 5'-W G G A T G C W-3' ImImPyHpImPy-γ-ImPyPyPyPyPyPyPyPyPyPyPyPyPyPyPyPyPyPyPy	
1357) 5'-W G G A T A T W-3' ImImPyHpPyHp-γ-PyHpPyHpPyPy 1358) 5'-W G G A T A A W-3' ImImPyHpPyPy-γ-HpHpPyHpPyPy 1359) 5'-W G G A T A G W-3' ImImPyHpPyPy-γ-HpHpPyHpPyPy 1360) 5'-W G G A T A C W-3' ImImPyHpPyPy-γ-ImHpPyHpPyPy 1361) 5'-W G G A T G T W-3' ImImPyHpImHp-γ-PyPyPyHpPyPy 1362) 5'-W G G A T G G W-3' ImImPyHpImPy-γ-HpPyPyPyPyPy 1363) 5'-W G G A T G G W-3' ImImPyHpImPy-γ-HpPyPyPyPyPyPyPyPyPyPyPyPyPyPyPyPyPyPyPy	
1358) 5'-W G G A T A A W-3' ImImPyHpPyPy-γ-HpHpPyHpPyPy 1360) 5'-W G G A T A G W-3' ImImPyHpPyPy-γ-HpHpPyHpPyPy 1360) 5'-W G G A T A C W-3' ImImPyHpPyPy-γ-ImHpPyHpPyPy 1361) 5'-W G G A T G T W-3' ImImPyHpImHp-γ-PyPyPyHpPyPy 1362) 5'-W G G A T G A W-3' ImImPyHpImPy-γ-HpPyPyHpPyPy 1363) 5'-W G G A T G G W-3' ImImPyHpImIm-γ-PyPyPyHpPyPy 1364) 5'-W G G A T G C W-3' ImImPyHpImPy-γ-ImPyPyHpPyPy 1365) 5'-W G G A T C T W-3' ImImPyHpImPy-γ-PyImPyHpPyPy 1366) 5'-W G G A T C A W-3' ImImPyHpPyPy-γ-PyImPyHpPyPy 1367) 5'-W G G A T C G W-3' ImImPyHpPyPy-γ-HpImPyHpPyPy 1368) 5'-W G G A T C C W-3' ImImPyHpPyPy-γ-PyImPyHpPyPy 1369) 5'-W G G A A T T W-3' ImImPyHpPyPy-γ-ImImPyHpPyPy 1370) 5'-W G G A A T A W-3' ImImPyPyHpPy-γ-PyPyHpHpPyPy 1371) 5'-W G G A A T A W-3' ImImPyPyHpPy-γ-PyPyHpHpPyPy 1371) 5'-W G G A A T G W-3' ImImPyPyHpPy-γ-PyPyHpHpPyPy 1371) 5'-W G G A A T G W-3' ImImPyPyHpPy-γ-PyPyHpHpPyPy	
1359) 5'-W G G A T A G W-3' ImImPyHpPyIm-γ-PyHpPyHpPyPy 1360) 5'-W G G A T A C W-3' ImImPyHpPyPy-γ-ImHpPyHpPyPy 1361) 5'-W G G A T G T W-3' ImImPyHpImHp-γ-PyPyPyHpPyPy 1362) 5'-W G G A T G A W-3' ImImPyHpImHp-γ-PyPyPyHpPyPy 1363) 5'-W G G A T G G W-3' ImImPyHpImIm-γ-PyPyPyHpPyPy 1364) 5'-W G G A T G C W-3' ImImPyHpImPy-γ-ImPyPyHpPyPy 1365) 5'-W G G A T C T W-3' ImImPyHpPyPy-γ-PyImPyHpPyPy 1366) 5'-W G G A T C A W-3' ImImPyHpPyPy-γ-PyImPyHpPyPy 1367) 5'-W G G A T C C W-3' ImImPyHpPyPy-γ-PyImPyHpPyPy 1368) 5'-W G G A T C C W-3' ImImPyHpPyPy-γ-ImImPyHpPyPy 1369) 5'-W G G A T C C W-3' ImImPyHpPyPy-γ-ImImPyHpPyPy 1370) 5'-W G G A A T T W-3' ImImPyPyHpPy-γ-PyPyHpHpPyPy 1371) 5'-W G G A A T G W-3' ImImPyPyHpPy-γ-PyPyHpHpPyPy 1371) 5'-W G G A A T G W-3' ImImPyPyHpIm-γ-PyPyHpHpPyPy	
1360) 5'-W G G A T A C W-3' ImImPyHpPyPy-γ-ImHpPyHpPyPy 1361) 5'-W G G A T G T W-3' ImImPyHpImHp-γ-PyPyPyHpPyPy 1362) 5'-W G G A T G A W-3' ImImPyHpImPy-γ-HpPyPyHpPyPy 1363) 5'-W G G A T G G W-3' ImImPyHpImIm-γ-PyPyPyHpPyPy 1364) 5'-W G G A T G C W-3' ImImPyHpImPy-γ-ImPyPyHpPyPy 1365) 5'-W G G A T C T W-3' ImImPyHpPyPy-γ-PyImPyHpPyPy 1366) 5'-W G G A T C A W-3' ImImPyHpPyPy-γ-HpImPyHpPyPy 1367) 5'-W G G A T C G W-3' ImImPyHpPyPy-γ-PyImPyHpPyPy 1368) 5'-W G G A T C C W-3' ImImPyHpPyPy-γ-ImImPyHpPyPy 1369) 5'-W G G A A T T W-3' ImImPyPyPyPy-γ-ImImPyHpPyPy 1370) 5'-W G G A A T A W-3' ImImPyPyHpHp-γ-PyPyHpHpPyPy 1371) 5'-W G G A A T G W-3' ImImPyPyHpIm-γ-PyPyHpHpPyPy 1371) 5'-W G G A A T G W-3' ImImPyPyHpIm-γ-PyPyHpHpPyPy	
1361) 5'-W G G A T G T W-3' ImImPyHpImHp-γ-PyPyPyHpPyPy 1362) 5'-W G G A T G A W-3' ImImPyHpImHp-γ-PyPyPyHpPyPy 1363) 5'-W G G A T G G W-3' ImImPyHpImIm-γ-PyPyPyHpPyPy 1364) 5'-W G G A T G C W-3' ImImPyHpImPy-γ-ImPyPyHpPyPy 1365) 5'-W G G A T C T W-3' ImImPyHpPyPy-γ-PyImPyHpPyPy 1366) 5'-W G G A T C A W-3' ImImPyHpPyPy-γ-PyImPyHpPyPy 1367) 5'-W G G A T C G W-3' ImImPyHpPyPy-γ-PyImPyHpPyPy 1368) 5'-W G G A T C C W-3' ImImPyHpPyPy-γ-PyImPyHpPyPy 1369) 5'-W G G A A T T W-3' ImImPyHpPyPy-γ-PyPyHpHpPyPy 1370) 5'-W G G A A T A W-3' ImImPyPyHpPy-γ-PyPyHpHpPyPy 1371) 5'-W G G A A T G W-3' ImImPyPyHpPy-γ-PyPyHpHpPyPy	
1362) 5'-W G G A T G A W-3' ImImPyHpImPy-γ-HpPyPyHpPyPy 1363) 5'-W G G A T G G W-3' ImImPyHpImIm-γ-PyPyPyHpPyPy 1364) 5'-W G G A T G C W-3' ImImPyHpImPy-γ-ImPyPyHpPyPy 1365) 5'-W G G A T C T W-3' ImImPyHpPyHp-γ-PyImPyHpPyPy 1366) 5'-W G G A T C A W-3' ImImPyHpPyPy-γ-HpImPyHpPyPy 1367) 5'-W G G A T C G W-3' ImImPyHpPyIm-γ-PyImPyHpPyPy 1368) 5'-W G G A T C C W-3' ImImPyHpPyPy-γ-ImImPyHpPyPy 1369) 5'-W G G A A T T W-3' ImImPyPyHpPy-γ-PyPyHpHpPyPy 1370) 5'-W G G A A T A W-3' ImImPyPyHpPy-γ-PyPyHpHpPyPy 1371) 5'-W G G A A T G W-3' ImImPyPyHpIm-γ-PyPyHpHpPyPy 1371) 5'-W G G A A T G W-3' ImImPyPyHpIm-γ-PyPyHpHpPyPy	
1363) 5'-W G G A T G G W-3' ImImPyHpImIm-γ-PyPyPyPyPyPyPyPyPyPyPyPyPyPyPyPyPyPyP	
1364) 5'-W G G A T G C W-3' ImImPyHpImPy-γ-ImPyPyHpPyPy 1365) 5'-W G G A T C T W-3' ImImPyHpPyHp-γ-PyImPyHpPyPy 1366) 5'-W G G A T C A W-3' ImImPyHpPyPy-γ-HpImPyHpPyPy 1367) 5'-W G G A T C G W-3' ImImPyHpPyPy-γ-PyImPyHpPyPy 1368) 5'-W G G A T C C W-3' ImImPyHpPyPy-γ-ImImPyHpPyPy 1369) 5'-W G G A A T T W-3' ImImPyPyHpPy-γ-PyPyHpHpPyPy 1370) 5'-W G G A A T A W-3' ImImPyPyHpPy-γ-HpPyHpHpPyPy 1371) 5'-W G G A A T G W-3' ImImPyPyHpPy-γ-HpPyHpHpPyPy 1371) 5'-W G G A A T G W-3' ImImPyPyHpIm-γ-PyPyHpHpPyPy	
1365) 5'-W G G A T C T W-3' ImImPyHpPyHp-γ-PyImPyHpPyPy 1366) 5'-W G G A T C A W-3' ImImPyHpPyPy-γ-HpImPyHpPyPy 1367) 5'-W G G A T C G W-3' ImImPyHpPyIm-γ-PyImPyHpPyPy 1368) 5'-W G G A T C C W-3' ImImPyHpPyPy-γ-ImImPyHpPyPy 1369) 5'-W G G A A T T W-3' ImImPyPyHpHp-γ-PyPyHpHpPyPy 1370) 5'-W G G A A T A W-3' ImImPyPyHpPy-γ-HpPyHpHpPyPy 1371) 5'-W G G A A T G W-3' ImImPyPyHpIm-γ-PyPyHpHpPyPy	
1366) 5'-W G G A T C A W-3' ImImPyHpPyPy-γ-HpImPyHpPyPy 1367) 5'-W G G A T C G W-3' ImImPyHpPyPy-γ-HpImPyHpPyPy 1368) 5'-W G G A T C C W-3' ImImPyHpPyPy-γ-ImImPyHpPyPy 20 1369) 5'-W G G A A T T W-3' ImImPyPyHpHp-γ-PyPyHpHpPyPy 1370) 5'-W G G A A T A W-3' ImImPyPyHpHp-γ-PyPyHpHpPyPy 1371) 5'-W G G A A T G W-3' ImImPyPyHpIm-γ-PyPyHpHpPyPy	
1367) 5'-W G G A T C G W-3' ImImPyHpPyIm-γ-PyImPyHpPyPy 1368) 5'-W G G A T C C W-3' ImImPyHpPyPy-γ-ImImPyHpPyPy 20 1369) 5'-W G G A A T T W-3' ImImPyPyHpHp-γ-PyPyHpHpPyPy 1370) 5'-W G G A A T A W-3' ImImPyPyHpPy-γ-HpPyHpHpPyPy 1371) 5'-W G G A A T G W-3' ImImPyPyHpIm-γ-PyPyHpHpPyPy	
1368) 5'-W G G A T C C W-3' ImImPyHpPyPy-γ-ImImPyHpPyPy 20 1369) 5'-W G G A A T T W-3' ImImPyPyHpHp-γ-PyPyHpHpPyPy 1370) 5'-W G G A A T A W-3' ImImPyPyHpPy-γ-HpPyHpHpPyPy 1371) 5'-W G G A A T G W-3' ImImPyPyHpIm-γ-PyPyHpHpPyPy	
20 1369) 5'-W G G A A T T W-3' ImImPyPyHpHp-γ-PyPyHpHpPyPy 1370) 5'-W G G A A T A W-3' ImImPyPyHpPy-γ-HpPyHpHpPyPy 1371) 5'-W G G A A T G W-3' ImImPyPyHpIm-γ-PyPyHpHpPyPy	
1370) 5'-W G G A A T A W-3' ImImPyPyHpPy-γ-HpPyHpHpPyPy 1371) 5'-W G G A A T G W-3' ImImPyPyHpIm-γ-PyPyHpHpPyPy	
1371) 5'-W G G A A T G W-3' ImImPyPyHpIm-γ-PyPyHpHpPyPy	
1372) 5'-W G G A A T C W-3' ImImPyPyHpPy-γ-ImPyHpHpPyPy	
1373) 5'-W G G A A T W-3' ImImPyPyPyHp-γ-РуНрНрРуРу	
25 1374) 5'-W G G A A A A W-3' ImImPyPyPyPy-γ-HpHpHpPyPy	
1375) 5'-W G G A A A G W-3' ImImPyPyPyIm-γ-PyHpHpPyPy	
1376) 5'-W G G A A A C W-3' ImImPyPyPyPy-γ-ImHpHpHpPyPy	
1377) 5'-W G G A A G T W-3' ImImPyPyImHp-γ-PyPyHpHpPyPy	
1378) 5'-W G G A A G A W-3' ImImPyPyImPy-γ-HpPyHpHpPyPy	
30 1379) 5'-W G G A A G G W-3' ImImPyPyImIm-γ-PyPyHpHpPyPy	
1380) 5'-W G G A A G C W-3' ImImPyPyImPy-γ-ImPyHpHpPyPy	
1381) 5'-W G G A A C T W-3' ImImPyPyPyHp-γ-PyImHpHpPyPy	
1382) 5'-W G G A A C A W-3' ImImPyPyPyPy-γ-HpImHpHpPyPy	
1383) 5'-W G G A A C G W-3' ImImPyPyPyIm-γ-PyImHpHpPyPy	
35 1384) 5'-W G G A A C C W-3' ImImPyPyPyPy-γ-ImImHpHpPyPy	

 T	ABLE 89: 12-ring Hairpin Polyamides for	r recognition of 8-bp 5'-WGGASNNW-3'
 	DNA sequence	aromatic amino acid sequence
1385)	5'-W G G A G T T W-3'	ІтІтруітнрнр-ү-Рурурунрруру
1386)	5'-W G G A G T A W-3'	ImImРуImНpРу-ү-НpРуРуНpРуРу
1387)	5'-W G G A G T G W-3'	ImImРуImНрIm-ү-РуРуРуНрРуРу
1388)	5'-W G G A G T C W-3'	Ітітруітрру-ү-ітрурунрруру
1389)	5'-W G G A G A T W-3'	ImImРуImРуНр-ү-РуНрРуНрРуРу
1390)	5'-W G G A G A A W-3'	ImImPyImPyPy-ү-НрНрРуНрРуРу
1391)	5'-W G G A G A G W-3'	ImImРуImРуIm-ү-РуНрРуНрРуРу
1392)	5'-W G G A G A C W-3'	ImImРуImРуРу-ү-ImНрРуНрРуРу
1393)	5'-W G G A G G T W-3'	ІтітРуітітр-ү-РуРуРуНрРуРу
1394)	5'-W G G A G G A W-3'	ImImPyImImPy-ү-НpРyРyНpРyРy
1395)	5'-W G G A G C T W-3'	ImImPyImPyHp-y-PyImPyHpPyPy
1396)	5'-W G G A G C A W-3'	ImImРуImРуРу-ү-НрImРуНрРуРу
1397)	5'-W G G A G G G W-3'	ІтІтРуІтІт-ү-РуРуРуНрРуРу
1398)	5'-W G G A G G C W-3'	ImImPyImImPy-y-ImPyPyHpPyPy
1399)	5'-W G G A G C G W-3'	ImImPyImPyIm-y-PyImPyHpPyPy
1400)	5'-W G G A G C C W-3'	ImImPyImPyPy-y-ImImPyHpPyPy
1401)	5'-W G G A C T T W-3'	${\tt ImImPyPyHpHp-}\gamma\hbox{-\tt PyPyImHpPyPy}$
1402)	5'-W G G A C T A W-3'	ІтітРуРуНрРу-ү-НрРуІтНрРуРу
1403)	5'-W G G A C T G W-3'	${\tt ImImPyPyHpIm-\gamma-PyPyImHpPyPy}$
1404)	5'-W G G A C T C W-3'	ІмІмРуРуНрРу-у-ІмРуІмНрРуРу
1405)	5'-W G G A C A T W-3'	ImImРуРуРуНр-ү-РуНрImНрРуРу
1406)	5'-W G G A C A A W-3'	ІтІтРуРуРуРу-ү-НрНрІтНрРуРу
1407)	5'-W G G A C A G W-3'	$ImImPyPyPyIm-\gamma-PyHpImHpPyPy$
1408)	5'-W G G A C A C W-3'	ImImРуРуРуРу-ү-ImНpImНpРуРу
1409)	5'-W G G A C G T W-3'	${\tt ImImPyPyImHp-\gamma-PyPyImHpPyPy}$
1410)	5'-W G G A C G A W-3'	ImImPyPyImPy-7-HpPyImHpPyPy
1411)	5'-W G G A C C T W-3'	ІшІшьь у раз Іштана Ішт
1412)	5'-W G G A C C A W-3'	ІтітРуРуРуРу-ү-НрітітНрРуРу
1413)	5'-W G G A C G G W-3'	ImImPyPyImIm-y-PyPyImHpPyPy
1414)	5'-W G G A C G C W-3'	ImImPyPyImPy-7-ImPyImHpPyPy
1415)	5'-W G G A C C G W-3'	Ітітруруруіт-ү-руітітрруру
1416)	5'-W G G A C C C W-3'	ImImРуРуРуРу-ү-ImImImHpРуРу

	T.	ABLE 90: 12-ring Hairpin Polyamides for rec	cognition of 8-bp 5'-WGGCWNNW-3'
		DNA sequence	aromatic amino acid sequence
	1417)	5'-W G G C T T T W-3'	${\tt ImImPyHpHpHp-\gamma-PyPyPyImPyPy}$
5	1418)	5'-W G G C T T A W-3'	ІмІmРуНрНрРу-ү-НрРуРуІmРуРу
	1419)	5'-W G G C T T G W-3'	ImImPyHpHpIm-y-PyPyPyImPyPy
	1420)	5'-W G G C T T C W-3'	$\tt ImImPyHpHpPy-\gamma-ImPyPyImPyPy$
	1421)	5'-W G G C T A T W-3'	${\tt ImImPyHpPyHp-\gamma-PyHpPyImPyPy}$
	1422)	5'-W G G C T A A W-3'	ІтІтРунрРуРу-ү-нрнрРуІтРуРу
10	1423)	5'-W G G C T A G W-3'	${\tt ImImPyHpPyIm-\gamma-PyHpPyImPyPy}$
	1424)	5'-W G G C T A C W-3'	${\tt ImImPyHpPyPy-\gamma-ImHpPyImPyPy}$
	1425)	5'-W G G C T G T W-3'	${\tt ImImPyHpImHp-\gamma-PyPyPyImPyPy}$
	1426)	5'-W G G C T G A W-3'	${\tt ImImPyHpImPy-\gamma-HpPyPyImPyPy}$
	1427)	5'-W G G C T G G W-3'	ImImPyHpImIm-y-PyPyPyImPyPy
15	1428)	5'-W G G C T G C W-3'	$\stackrel{\cdot}{\text{Im}}$ ImPyHpImPy- γ -ImPyPyImPyPy
	1429)	5'-W G G C T C T W-3'	${\tt ImImPyHpPyHp-\gamma-PyImPyImPyPy}$
	1430)	5'-W G G C T C A W-3'	ImImPyHpPyPy-7-HpImPyImPyPy
	1431)	5'-W G G C T C G W-3'	ImImPyHpPyIm-7-PyImPyImPyPy
	1432)	5'-W G G C T C C W-3'	ImImPyHpPyPy-7-ImImPyImPyPy
20	1433)	5'-W G G C A T T W-3'	ІтітРуРуНрНр-ү-РуРуНрІтРуРу
	1434)	5'-W G G C A T A W-3'	ІшІтРуРуНрРу-ү-НрРуНрІтРуРу
	1435)	5'-W G G C A T G W-3'	ImImPyPyHpIm-y-PyPyHpImPyPy
	1436)	5'-W G G C A T C W-3'	ImImPyPyHpPy-7-ImPyHpImPyPy
	1437)	5'-W G G C A A T W-3'	ІтІтРуРуРуНр-ү-РуНрНрІтРуРу
25	1438)	5'-W G G C A A A W-3'	ImImPyPyPyPy-7-HpHpHpImPyPy
	1439)	5'-W G G C A A G W-3'	ImImPyPyPyIm-γ-PyHpHpImPyPy
	1440)	5'-W G G C A A C W-3'	ImImPyPyPyPy-y-ImHpHpImPyPy
	1441)	5'-W G G C A G T W-3'	ImImPyPyImHp-y-PyPyHpImPyPy
	1442)	5'-W G G C A G A W-3'	ImImPyPyImPy-7-HpPyHpImPyPy
30	1443)	5'-W G G C A G G W-3'	ImImPyPyImIm-y-PyPyHpImPyPy
	1444)	5'-W G G C A G C W-3'	ImImPyPyImPy-7-ImPyHpImPyPy
	1445)	5'-W G G C A C T W-3'	ImImPyPyPyHp-y-PyImHpImPyPy
	1446)	5'-W G G C A C A W-3'	ImImPyPyPyPy-7-HpImHpImPyPy
	1447)	5'-W G G C A C G W-3'	ImImPyPyPyIm-7-PyImHpImPyPy
35	1448)	5'-W G G C A C C W-3'	ImImPyPyPyPy-7-ImImHpImPyPy

	7	FABLE 91: 12-ring Hairpin Polyamides for r	ecognition of 8-bp 5'-WGGCSNNW-3'
-		DNA sequence	aromatic amino acid sequence
	1449)	5'-W G G C G T T W-3'	${\tt ImImPyImHpHp-\gamma-PyPyPyImPyPy}$
5	1450)	5'-W G G C G T A W-3'	ImImPyImHpPy-y-HpPyPyImPyPy
	1451)	5'-W G G C G T G W-3'	ImImPyImHpIm-ү-РуРуРуImРуРу
	1452)	5'-W G G C G T C W-3'	ImImPyImHpPy-y-ImPyPyImPyPy
	1453)	5'-W G G C G A T W-3'	ImImPyImPyHp-y-PyHpPyImPyPy
	1454)	5'-W G G C G A A W-3'	ImImPyImPyPy-7-HpHpPyImPyPy
10	1455)	5'-W G G C G A G W-3'	ImImPyImPyIm-y-PyHpPyImPyPy
	1456)	5'-W G G C G A C W-3'	ImImPyImPyPy-y-ImHpPyImPyPy
	1457)	5'-W G G C G G T W-3'	ImImPyImImHp-ү-РуРуРуImPyPy
	1458)	5'-W G G C G G A W-3'	ImImPyImImPy-y-HpPyPyImPyPy
	1459)	5'-W G G C G C T W-3'	ImImPyImPyHp-y-PyImPyImPyPy
15	1460)	5'-W G G C G C A W-3'	ImImPyImPyPy-y-HpImPyImPyPy
	1461)	5'-W G G C C T T W-3'	ImImPyPyHpHp-y-PyPyImImPyPy
	1462)	5'-W G G C C T A W-3'	ImImPyPyHpPy-y-HpPyImImPyPy
	1463)	5'-W G G C C T G W-3'	ImImPyPyHpIm-y-PyPyImImPyPy
	1464)	5'-W G G C C T C W-3'	ImImPyPyHpPy-y-ImPyImImPyPy
20	1465)	5'-W G G C C A T W-3'	ImImPyPyPyHp-y-PyHpImImPyPy
	1466)	5'-W G G C C A A W-3'	ImImPyPyPyPy-y-HpHpImImPyPy
	1467)	5'-W G G C C A G W-3'	ImImPyPyPyIm-y-PyHpImImPyPy
	1468)	5'-W G G C C A C W-3'	ImImPyPyPyPy-y-ImHpImImPyPy
	1469)	5'-W G G C C G T W-3'	ImImPyPyImHp-y-PyPyImImPyPy
25	1470)	5'-W G G C C G A W-3'	ImImPyPyImPy-7-HpPyImImPyPy
	1471)	5'-W G G C C C T W-3'	ImImPyPyPyHp-y-PyImImImPyPy
	1472)	5'-W G G C C C A W-3'	ImImPyPyPyPy-y-HpImImImPyPy
	G57)	5'-W G G C G G G W-3'	ImImPyImImIm-y-PyPyPyImPyPy
	G58)	5'-W G G C G C W-3'	ImImPyImImPy-y-ImPyPyImPyPy
30	G59)	5'-W G G C G C G W-3'	ImImPyImPyIm-y-PyImPyImPyPy
	G60)	5'-W G G C G C C W-3'	ImImPyImPyPy-y-ImImPyImPyPy
	G61)	5'-W G G C C G G W-3'	ImImPyPyImIm-y-PyPyImImPyPy
	G62)	5'-W G G C C G C W-3'	ImImPyPyImPy-y-ImPyImImPyPy
25	G63)	5'-W G G C C C G W-3'	ImImPyPyPyIm-y~PyImImImPyPy
35	G64)	5'-W G G C C C C W-3'	ImImPyPyPyPy-y-ImImImImPyPy

	Т	ABLE 92: 12-ring Hairpin Polyamides for rec	cognition of 8-bp 5'-WGCGWNNW-3'
****		DNA sequence	aromatic amino acid sequence
	1473)	5'-W G C G T T T W-3'	ImPyImHpHpHp-y-PyPyPyPyImPy
5	1474)	5'-W G C G T T A W-3'	${\tt ImPyImHpHpPy-\gamma-HpPyPyPyImPy}$
	1475)	5'-W G C G T T G W-3'	${\tt ImPyImHpHpIm-\gamma-PyPyPyPyImPy}$
	1476)	5'-W G C G T T C W-3'	${\tt ImPyImHpHpPy-\gamma-ImPyPyPyImPy}$
	1477)	5'-W G C G T A T W-3'	${\tt ImPyImHpPyHp-\gamma-PyHpPyPyImPy}$
	1478)	5'-W G C G T A A W-3'	${\tt ImPyImHpPyPy-\gamma-HpHpPyPyImPy}$
10	1479)	5'-W G C G T A G W-3'	ImPyImHpPyIm-y-PyHpPyPyImPy
	1480)	5'-W G C G T A C W-3'	ImPyImHpPyPy-y-ImHpPyPyImPy
	1481)	5'-W G C G T G T W-3'	ImPyImHpImHp-7-PyPyPyPyImPy
	1482)	5'-W G C G T G A W-3'	ImPyImHpImPy-7-HpPyPyPyImPy
	1483)	5'-W G C G T G G W-3'	ImPyImHpImIm-y-PyPyPyPyImPy
15	1484)	5'-W G C G T G C W-3'	ImPyImHpImPy-7-ImPyPyPyImPy
	1485)	5'-W G C G T C T W-3'	ImPyImHpPyHp-y-PyImPyPyImPy
	1486)	5'-W G C G T C A W-3'	ImPyImHpPyPy-y-HpImPyPyImPy
	1487)	5'-W G C G T C G W-3'	ImPyImHpPyIm-y-PyImPyPyImPy
	1488)	5'-W G C G T C C W-3'	ImPyImHpPyPy-y-ImImPyPyImPy
20	1489)	5'-W G C G A T T·W-3'	ImРуImРуНрНр-ү-РуРуНрРуImРу
	1490)	5'-W G C G A T A W-3'	ImPyImPyHpPy-ү-HpPyHpPyImPy
	1491)	5'-W G C G A T G W-3'	ImPyImPyHpIm-y-PyPyHpPyImPy
	1492)	5'-W G C G A T C W-3'	ImPyImPyHpPy-y-ImPyHpPyImPy
	1493)	5'-W G C G A A T W-3'	ІтРуІтРуРуНр-ү-РуНрНрРуІтРу
25	1494)	5'-W G C G A A A W-3'	ImPyImPyPyPy-y-HpHpHpPyImPy
	1495)	5'-W G C G A A G W-3'	ImPyImPyPyIm-y-PyHpHpPyImPy
	1496)	5'-W G C G A A C W-3'	ImPyImPyPyPy-y-ImHpHpPyImPy
	1497)	5'-W G C G A G T W-3'	ImPyImPyImHp-y-PyPyHpPyImPy
	1498)	5'-W G C G A G A W-3'	ImPyImPyImPy-7-HpPyHpPyImPy
30	1499)	5'-W G C G A G G W-3'	ImPyImPyImIm-y-PyPyHpPyImPy
	1490)	5'-W G C G A G C W-3'	ImPyImPyImPy-7-ImPyHpPyImPy
	1501)	5'-W G C G A C T W-3'	${\tt ImPyImPyPyHp-\gamma-PyImHpPyImPy}$
	1502)	5'-W G C G A C A W-3'	ImPyImPyPyPy-γ-HpImHpPyImPy
	1503)	5'-W G C G A C G W-3'	ImPyImPyPyIm-7-PyImHpPyImPy
35	1504)	5'-W G C G A C C W-3'	ImPyImPyPyPy-7-ImImHpPyImPy

	7	TABLE 93: 12-ring Hairpin Polyamides for	
-		DNA sequence	aromatic amino acid sequence
	1505)	5'-W G C G G T T W-3'	${\tt ImPyImImHpHp-\gamma-PyPyPyPyImPy}$
5	1506)	5'-W G C G G T A W-3'	${\tt ImPyImImHpPy-}\gamma{\tt -HpPyPyPyImPy}$
	1507)	5'-W G C G G T G W-3'	ImPyImImHpIm-7-PyPyPyPyImPy
	1508)	5'-W G C G G T C W-3'	ImPyImImHpPy-y-ImPyPyPyImPy
	1509)	5'-W G C G G A T W-3'	ImPyImImPyHp-γ-РуНpРуРуІmРу
	1510)	5'-W G C G G A A W-3'	ImPyImImPyPy-ү-HpHpPyPyImPy
10	1511)	5'-W G C G G A G W-3'	ImPyImImPyIm-γ-РуНрРуРуІmPy
	1512)	5'-W G C G G A C W-3'	ImPyImImPyPy-ү-ImHpPyPyImPy
	1513)	5'-W G C G G G T W-3'	ImPyImImImHp-7-PyPyPyPyImPy
	1514)	5'-W G C G G G A W-3'	ImPyImImImPy-7-HpPyPyPyImPy
	1515)	5'-W G C G G C T W-3'	ImPyImImPyHp-y-PyImPyPyImPy
15	1516)	5'-W G C G G C A W-3'	ImPyImImPyPy-7-HpImPyPyImPy
	1517)	5'-W G C G C T T W-3'	ImPyImPyHpHp-ү-РуРуImРyImPy
	1518)	5'-W G C G C T A W-3'	ImPyImPyHpPy-y-HpPyImPyImPy
	1519)	5'-W G C G C T G W-3'	ImPyImPyHpIm- γ-РуРу ImPyIm Py
	1520)	5'-W G C G C T C W-3'	ImPyImPyHpPy-y-ImPyImPyImPy
20	1521)	5'-W G C G C A T W-3'	ImPyImPyPyHp-y-PyHpImPyImPy
	1522)	5'-W G C G C A A W-3'	ImPyImPyPyPy-ү-HpHpImPyImPy
	1523)	5'-W G C G C A G W-3'	ImPyImPyPyIm-y-PyHpImPyImPy
	1524)	5'-W G C G C A C W-3'	ImPyImPyPyPy-7-ImHpImPyImPy
	1525)	5'-W G C G C G T W-3'	ImPyImPyImHp-7-PyPyImPyImPy
25	1526)	5'-W G C G C G A W-3'	ImPyImPyImPy-7-HpPyImPyImPy
	1527)	5'-W G C G C C T W-3'	ImPyImPyPyHp-γ-PyImImPyImPy
	1528)	5'-W G C G C C A W-3'	ImPyImPyPyPy-ү-HpImImPyImPy
	G65)	5'-W G C G G G W-3'	ImPyImImImIm-y-PyPyPyPyImPy
	G66)	5'-W G C G G G C W-3'	ImPyImImImPy-7-ImPyPyPyImPy
30	G67)	5'-W G C G G C G W-3'	ImPyImImPyIm-γ-PyImPyPyImPy
	G68)	5'-W G C G G C C W-3'	ImPyImImPyPy-γ-ImImPyPyImPy
	G69)	5'-W G C G C G G W-3'	ImPyImPyImIm-γ-PyPyImPyImPy
	G70)	5'-W G C G C G C W-3'	ImPyImPyImPy-7-ImPyImPyImPy
	G71)	5'-W G C G C C G W-3'	ImPyImPyPyIm-y-PyImImPyImPy
35	G72)	5'-W G C G C C C W-3'	ImPyImPyPyPy-γ-ImImImPyImPy

	T	ABLE 94: 12-ring Hairpin Polyamides for re	cognition of 8-bp 5'-WGCTWNNW-3'
		DNA sequence	aromatic amino acid sequence
	1529)	5'-W G C T T T T W-3'	ІшБУНБНБНБ-4-БУБУБУБУБУБ
5	1530)	5"-W G C T T T A W-3'	ІмРуНрНрРу-ү-НрРуРуРуІмРу
	1531)	5'-W G C T T T G W-3'	ІтРунрнрнріт-ү-РуРуРуРуітРу
	1532)	5'-W G C T T T C W-3'	ImPyHpHpHpPy-ү-ImPyPyPyImPy
	1533)	5'-W G C T T A T W-3'	ІшБУНрНрБУНр-ү-БУНрБУБУІшБУ
	1534)	5'-W G C T T A A W-3'	ІтРунрнрРуРу-ү-нрнрРуРуІтРу
10	1535)	5'-W G C T T A G W-3'	ІтРунрнрРуІт-ү-РунрРуРуІтРу
	1536)	5'-W G C T T A C W-3'	ІтРунрнрРуРу-ү-ІтнрРуРуІтРу
	1537)	5'-W G C T T G T W-3'	ІтРунрнрітнр-ү-РуРуРуРуітРу
	1538)	5'-W G C T T G A W-3'	ІтРуНрНрІтРу-ү-НрРуРуРуІтРу
	1539)	5'-W G C T T G G W-3'	ІтРуНрНрІтіт-ү-РуРуРуРуІтРу
15	1540)	5'-W G C T T G C W-3'	ImРуНрНрImРу-ү-ImРуРуРуImРу
	1541)	5'-W G C T T C T W-3'	ІтРунрнрРунр-ү-РуІтРуРуІтРу
	1542)	5'-W G C T T C A W-3'	ІтРунрнрРуРу~ү-нрІтРуРуІтРу
	1543)	5'-W G C T T C G W-3'	ІтРуНрНрРуІт-ү-РуІтРуРуІтРу
	1544)	5'-W G C T T C C W-3'	ІтРуНрНрРуРу-ү-ІтІтРуРуІтРу
20	1545)	5'-W G C T A T T W-3'	ImРуНрРуНрНр-γ-РуРуНрРуІmРу
	1546)	5'-W G C T A T A W-3'	ІтРунрРунрРу-ү-нрРунрРуІтРу
	1547)	5'-W G C T A T G W-3'	ІтРуНрРуНрІт-ү-РуРуНрРуІтРу
	1548)	5'-W G C T A T C W-3'	ІтРуНрРуНрРу-ү-ІтРуНрРуІтРу
	1549)	5'-W G C T A A T W-3'	ІшБУНББАДБА - А-БАНББАДБА
25	1550)	5'-W G C T A A A W-3'	ІмРуНрРуРуРу-ү-НрНрНрРуІмРу
	1551)	5'-W G C T A A G W-3'	$\stackrel{\cdot}{\text{ImPyHpPyPyIm-}\gamma\text{-PyHpHpPyImPy}}$
	1552)	5'-W G C T A A C W-3'	ІтРуНрРуРуРу-ү-ІтНрНрРуІтРу
	1553)	5'-W G C T A G T W-3'	ІтРунрРуІтнр-ү-РуРунрРуІтРу
	1554)	5'-W G C T A G A W-3'	ImPyHpPyImPy-y-HpPyHpPyImPy
30	1555)	5'-W G C T A G G W-3'	ImPyHpPyImIm-y-PyPyHpPyImPy
	1556)	5'-W G C T A G C W-3'	ІтРунрРуІтРу-ү-ІтРунрРуІтРу
	1557)	5'-W G C T A C T W-3'	Ӏ mРуНрРуРуНр-γ-РуІmНрРуІmРу
	1558)	5'-W G C T A C A W-3'	ІтРунрРуРуРу-ү-нрІтнрРуІтРу
	1559)	5'-W G C T A C G W-3'	ІтРунрРуРуІт-ү-РуІтнрРуІтРу
35	1560)	5'-W G C T A C C W-3'	ІтРунрРуРуРу-ү-ІтІтнрРуІтРу

-	TABLE 95: 12-ring Ha	irpin Polyamides for 1	recognition of 8-bp 5'-WGCTSNNW-3'
=	DNA sequence		aromatic amino acid sequence
	1561) 5'-W G C T G 7		ІтРУНрІтНрНр-ү-РуРуРуРуІтРу
5	1562) 5'-W G C T G	T A W-3'	ІмРуНрІмНрРу-ү-НрРуРуРуІмРу
	1563) 5'-W G C T G 5	G W-3'	ІмРуНрІмНрім-ү-РуРуРуРуімРу
	1564) 5'-W G C T G	C W-3'	ІмРуНрІмНрРу-ү-ІмРуРуРуІмРу
	1565) 5'-W G C T G 1	T W-3'	ImРуНрImРуНр-γ-РуНрРуРуІmРу
	1566) 5'-W G C T G A	A W-3'	ІмРуНрІмРуРу-ү-НрНрРуРуІмРу
)	1567) 5'-W G C T G A	4 G W-3'	ImPyHpImPyIm-7-PyHpPyPyImPy
	1568) 5'-W G C T G A	C W-3'	ImPyHpImPyPy-y-ImHpPyPyImPy
	1569) 5'-W G C T G (3 T W-3'	ImPyHpImImHp-y-PyPyPyPyImPy
	1570) 5'-W G C T G (3 A W-3'	ImPyHpImImPy-7-HpPyPyPyImPy
	1571) 5'-W G C T G (T W-3'	ImРуНрImРуНр-γ-РуImРуРуImРу
;	1572) 5'-W G C T G (! A W-3!	ImPyHpImPyPy-ү-HpImPyPyImPy
	1573) 5'-W G C T G (G W-3'	ImPyHpImImIm-y-PyPyPyPyImPy
	1574) 5'-W G C T G C	C W-3'	ImPyHpImImPy-y-ImPyPyPyImPy
	1575) 5'-W G C T G (' G W-3'	ImPyHpImPyIm-y-PyImPyPyImPy
	1576) 5'-W G C T G C	C W-3'	ImPyHpImPyPy-7-ImImPyPyImPy
•	1577) 5'-W G C T C T	' T W-3'	ІшБУНББАРАТЬ І ТОТОТОТОТОТОТОТОТОТОТОТОТОТОТОТОТОТОТ
	1578) 5'-W G C T C T	' A W-3'	ІтРунрРунрРу-ү-нрРуІтРуІтРу
	1579) 5'-W G C T C T	' G W-3'	ІтРунрРунріт-ү-РуРуітРуітРу
	1580) 5'-W G C T C T	' C W-3'	ImPyHpPyHpPy-y-ImPyImPyImPy
	1581) 5'-W G C T C A	T W-3'	ImРуНpРуРуНp-ү-РуНpImРуImРу
	1582) 5'-W G C T C A	A W-3'	ImРуНрРуРуРу-γ-НрНрІmРуІmРу
	1583) 5'-W G C T C A	G W-3'	ImPyHpPyPyIm-γ-PyHpImPyImPy
	1584) 5'-W G C T C A	C W-3'	ImРуНpРуРуРу-ү-ImНpImРуImРу
	1585) 5'-W G C T C G	T W-3'	ІтРунрРуІтнр-ү-РуРуІтРуІтру
	1586) 5'-W G C T C G	A W-3'	ImPyHpPyImPy-7-HpPyImPyImPy
	1587) 5'-W G C T C C	T W-3'	ІтРУНрРУРУНр-ү-РУІтІтРУІтРу
	1588) 5'-W G C T C C	A W-3'	ImPyHpPyPyPy-y-HpImImPyImPy
	1589) 5'-W G C T C G	G W-3'	ImPyHpPyImIm-y-PyPyImPyImPy
	1590) 5'-W G C T C G	C W-3'	ImPyHpPyImPy-7-ImPyImPyImPy
	1591) 5'-W G C T C C	G W-3'	ІтРуНрРуРуІт-ү-РуІтІтРуІтРу
	1592) 5'-W G C T C C	C W-3'	ІтРуНрРуРуРу-ү-ІтІтІтРуІтРу

	Т	ABLE 96: 12-ring Hairpin Polyamides for re-	cognition of 8-bp 5'-WGCAWNNW-3'
		DNA sequence	aromatic amino acid sequence
	1593)	5'-W G C A T T T W-3'	ІтРуРуНрНрНр-ү-РуРуРуНрІтРу
5	1594)	5'-W G C A T T A W-3'	ImРуРуНрНрРу-ү-НрРуРуНрImРу
	1595)	5'-W G C A T T G W-3'	ImРуРуНрНрIm-ү-РуРуРуНрImРу
	1596)	5'-W G C A T T C W-3'	ImРуРуНрНрРу-ү-ImРуРуНрImРу
	1597)	5'-W G C A T A T W-3'	ІшБУБУНФБУНФ-4-БУНФБУНФІшБУ
	1598)	5'-W G C A T A A W-3'	ImРуРуНрРуРу-ү-НрНрРуНрImРу
10	1599)	5'-W G C A T A G W-3'	${\tt ImPyPyHpPyIm-\gamma-PyHpPyHpImPy}$
	1600)	5'-W G C A T A C W-3'	ІмРуРуНрРуРу-ү-ІмНрРуНрІмРу
	1601)	5'-W G C A T G T W-3'	ImРуРуНрImНр-ү-РуРуРуНрImРу
	1602)	5'-W G C A T G A W-3'	ImPyPyHpImPy-ү-HpPyPyHpImPy
	1603)	5'-W G C A T G G W-3'	ImPyPyHpImIm-ү-РуРуРуНpImPy
15	1604)	5'-W G C A T G C W-3'	ImPyPyHpImPy-γ-ImPyPyHpImPy
	1605)	5'-W G C A T C T W-3'	ІтРуРуНрРуНр-ү-РуІтРуНрІтРу
	1606)	5'-W G C A T C A W-3'	ImРуРуНрРуРу-ү-НрImРуНрImРу
	1607)	5'-W G C A T C G W-3'	ImPyPyHpPyIm-y-PyImPyHpImPy
	1608)	5'-W G C A T C C W-3'	ImРуРуНрРуРу-ү-ImImРуНрImРу
20	1609)	5'-W G C A A T T W-3'	ІтРуРуРуНрНр-ү-РуРуНрНрІтРу
	1610)	5'-W G C A A T A W-3'	ІтРуРуРуНрРу-ү-НрРуНрНрІтРу
	1611)	5'-W G C A A T G W-3'	ImРуРуРуНрIm-ү-РуРуНрНрImРу
	1612)	5'-W G C A A T C W-3'	ІтРуРуРуНрРу-ү-ІтРуНрНрІтРу
	1613)	5'-W G C A A A T W-3'	ІтРуРуРуРуНр-ү-РуНрНрНрІтРу
25	1614)	5'-W G C A A A A W-3'	ІтРуРуРуРуРу-ү-НрНрНрНрІтРу
	1615)	5'-W G C A A A G W-3'	ImРуРуРуРуIm-γ-РуНрНрНрImРу
	1616)	5'-W G C A A A C W-3'	ІтРуРуРуРуРу-ү-ІтНрНрНрІтРу
	1617)	5'-W G C A A G T W-3'	ІтРуРуРуІтНр-ү-РуРуНрНрІтРу
	1618)	5'-W G C A A G A W-3'	ІтРуРуРуІтРу-ү-НрРуНрНрІтРу
30	1619)	5'-W G C A A G G W-3'	ImPyPyPyImIm-y-PyPyHpHpImPy
	1620)	5'-W G C A A G C W-3'	<pre>ImPyPyPyImPy-γ-ImPyHpHpImPy</pre>
	1621)	5'-W G C A A C T W-3'	ІтРуРуРуРуНр-ү-РуІтНрНрІтРу
	1622)	5'-W G C A A C A W-3'	ImРуРуРуРуРу-ү-НрImНpНpImРy
	1623)	5'-W G C A A C G W-3'	ImPyPyPyPyIm-y-PyImHpHpImPy
35	1624)	5'-W G C A A C C W-3'	ІтРуРуРуРуРу-ү-ІтІтРу

	r	TABLE 97: 12-ring Hairpin Polyamides for recognition of 8-bp 5'-WGCASNNW-3'		
		DNA sequence	aromatic amino acid sequence	
	1625)	5'-W G C A G T T W-3'	ІmРуРуІmНрНр-γ-РуРуРуНрІmРу	
5	1626)	5'-W G C A G T A W-3'	ImPyPyImHpPy-γ-HpPyPyHpImPy	
	1627)	5'-W G C A G T G W-3'	ImРуРуІmНрІm-ү-РуРуРуНрІmРу	
	1628)	5'-W G C A G T C W-3'	ImРуРуImНpРу-ү-ImРуРуНpImРу	
	1629)	5'-W G C A G A T W-3'	ImРуРуІmРуНр-ү-РуНрРуНрІmРу	
	1630)	5'-W G C A G A A W-3'	ImРуРуІmРуРу-ү-НрНрРуНрІmРу	
10	1631)	5'-W G C A G A G W-3'	ІтРуРуІтРуІт-ү-РуНрРуНрІтРу	
	1632)	5'-W G C A G A C W-3'	ImРуРуІmРуРу-ү-ІmНpРуНpІmРу	
	1633)	5'-W G C A G G T W-3'	ImPyPyImImHp-ү-РуРуРуНрІmРу	
	1634)	5'-W G C A G G A W-3'	ImPyPyImImPy-y-HpPyPyHpImPy	
	1635)	5'-W G C A G C T W-3'	ІтРуРуІтРуНр-ү-РуІтРуНрІтРу	
15	1636)	5'-W G C A G C A W-3'	ImPyPyImPyPy-7-HpImPyHpImPy	
	1637)	5'-W G C A G G G W-3'	ІтРуРуІтІтт-ү-РуРуРуНрІтРу	
	1638)	5'-W G C A G G C W-3'	ImPyPyImImPy-y-ImPyPyHpImPy	
	1639)	5'-W G C A G C G W-3'	ImPyPyImPyIm-y-PyImPyHpImPy	
	1640)	5'-W G C A G C C W-3'	ImPyPyImPyPy-y-ImImPyHpImPy	
20	1641)	5'-W G C A C T T W-3'	ІмРуРуРуНрНр-ү-РуРуІмНрІмРу	
	1642)	5'-W G C A C T A W-3'	ImРуРуРуНpРу-ү-НpРуImНpImРу	
	1643)	5'-W G C A C T G W-3'	ІтРуРуРуНрІт-ү-РуРуІтНрІтРу	
	1644)	5'-W G C A C T C W-3'	${\tt ImPyPyPyHpPy-\gamma-ImPyImHpImPy}$	
	1645)	5'-W G C A C A T W-3'	ІтРуРуРуРуНр-ү-РуНрІтНрІтРу	
25	1646)	5'-W G C A C A A W-3'	${\tt ImPyPyPyPyPy-\gamma-HpHpImHpImPy}$	
	1647)	5'-W G C A C A G W-3'	ІmРуРуРуРуІm-γ-РуНрІmНрІmРу	
	1648)	5'-W G C A C A C W-3'	${\tt ImPyPyPyPyPy-\gamma-ImHpImHpImPy}$	
	1649)	5'-W G C A C G T W-3'	${\tt ImPyPyPyImHp-\gamma-PyPyImHpImPy}$	
	1650)	5'-W G C A C G A W-3'	${\tt ImPyPyPyImPy-\gamma-HpPyImHpImPy}$	
30	1651)	5'-W G C A C C T W-3'	${\tt ImPyPyPyPyHp-\gamma-PyImImHpImPy}$	
	1652)	5'-W G C A C C A W-3'	${\tt ImPyPyPyPyPy-\gamma-HpImImHpImPy}$	
	1653)	5'-W G C A C G G W-3'	ImPyPyPyImIm-y-PyPyImHpImPy	
	1654)	5'-W G C A C G C W-3'	ImPyPyPyImPy-y-ImPyImHpImPy	
	1655)	5'-W G C A C C G W-3'	ImPyPyPyPyIm-y-PyImImHpImPy	
35	1656)	5'-W G C A C C C W-3'	ImPyPyPyPyPy-γ-ImImImHpImPy	

	TABLE 98: 12-ring Hairpin Polyamides for recognition of 8-bp 5'-WGCCWNNW-3'				
·	DNA sequence	aromatic amino acid sequence			
	1657) 5'-W G C C T T T W-3'	ІмРуРуНрНрНр-ү-РуРуРуІмІмРу			
5	1658) 5'-W G C C T T A W-3'	ІмРуРуНрНрРу-ү-НрРуРуІмІмРу			
	1659) 5'-W G C C T T G W-3'	ImPyPyHpHpIm-y-PyPyPyImImPy			
	1660) 5'-W G C C T T C W-3'	ImPyPyHpHpPy-y-ImPyPyImImPy			
	1661) 5'-W G C C T A T W-3'	${\tt ImPyPyHpPyHp-\gamma-PyHpPyImImPy}$			
	1662) 5'-W G C C T A A W-3'	ImРуРуНрРуРу-ү-НрНрРуІmІmРу			
10	1663) 5'-W G C C T A G W-3'	${\tt ImPyPyHpPyIm-\gamma-PyHpPyImImPy}$			
	1664) 5'-W G C C T A C W-3'	${\tt ImPyPyHpPyPy-\gamma-ImHpPyImImPy}$			
	1665) 5'-W G C C T G T W-3'	ImPyPyHpImHp-y-PyPyPyImImPy			
	1666) 5'-W G C C T G A W-3'	${\tt ImPyPyHpImPy-\gamma-HpPyPyImImPy}$			
	1667) 5'-W G C C T G G W-3'	ImPyPyHpImIm-y-PyPyPyImImPy			
15	1668) 5'-W G C C T G C W-3'	ImPyPyHpImPy-y-ImPyPyImImPy			
	1669) 5'-W G C C T C T W-3'	${\tt ImPyPyHpPyHp-\gamma-PyImPyImImPy}$			
	1670) 5'-W G C C T C A W-3'	ImPyPyHpPyPy-y-HpImPyImImPy			
	1671) 5'-W G C C T C G W-3'	ImPyPyHpPyIm-y-PyImPyImImPy			
	1672) 5'-W G C C T C C W-3'	ImPyPyHpPyPy-y-ImImPyImImPy			
20	1673) 5'-W G C C A T T W-3'	ImPyPyPyHpHp-y-PyPyHpImImPy			
	1674) 5'-W G C C A T A W-3'	ІтРуРуРуНрРу-ү-НрРуНрІтІтРу			
	1675) 5'-W G C C A T G W-3'	ImPyPyPyHpIm-y-PyPyHpImImPy			
	1676) 5'-W G C C A T C W-3'	ImPyPyPyHpPy-7-ImPyHpImImPy			
	1677) 5'-W G C C A A T W-3'	ImPyPyPyPyHp-y-PyHpHpImImPy			
25	1678) 5'-W G C C A A A W-3'	ІмРуРуРуРуРу-ү-НрНрНрІмІмРу			
	1679) 5'-W G C C A A G W-3'	ImPyPyPyPyIm-y-PyHpHpImImPy			
	1680) 5'-W G C C A A C W-3'	ImPyPyPyPyPy-y-ImHpHpImImPy			
	1681) 5'-W G C C A G T W-3'	ImPyPyPyImHp-y-PyPyHpImImPy			
	1682) 5'-W G C C A G A W-3'	ImPyPyPyImPy-7-HpPyHpImImPy			
30	1683) 5'-W G C C A G G W-3'	ImPyPyPyImIm-y-PyPyHpImImPy			
	1684) 5'-W G C C A G C W-3'	ImPyPyPyImPy-7-ImPyHpImImPy			
	1685) 5'-W G C C A C T W-3'	ImPyPyPyPyHp-7-PyImHpImImPy			
	1686) 5'-W G C C A C A W-3'	ImPyPyPyPyPy-7-HpImHpImImPy			
	1687) 5'-W G C C A C G W-3'	ImPyPyPyPyIm-7-PyImHpImImPy			
35	1688) 5'-W G C C A C C W-3'	ImPyPyPyPyPy-γ-ImImHpImImPy			

	TABLE 99: 12-ring Hairpin Polyamides for recognition of 8-bp 5'-WGCCSNNW-3'		
=		DNA sequence	aromatic amino acid sequence
	1689)	5'-W G C C G T T W-3'	${\tt ImPyPyImHpHp-\gamma-PyPyPyImImPy}$
	1690)	5'-W G C C G T A W-3'	ImРуРуImНpРу-ү-НpРуРуImImРу
	1691)	5'-W G C C G T G W-3'	ImPyPyImHpIm-γ-PyPyPyImImPy
	1692)	5'-W G C C G T C W-3'	ImPyPyImHpPy-7-ImPyPyImImPy
	1693)	5'-W G C C G A T W-3'	${\tt ImPyPyImPyHp-\gamma-PyHpPyImImPy}$
	1694)	5'-W G C C G A A W-3'	ІтРуРуІтРуРу-ү-НрНрРуІтІтРу
	1695)	5'-W G C C G A G W-3'	ImPyPyImPyIm-y-PyHpPyImImPy
	1696)	5'-W G C C G A C W-3'	ImPyPyImPyPy-y-ImHpPyImImPy
	1697)	5'-W G C C G G T W-3'	ImPyPyImImHp-7-PyPyPyImImPy
	1698)	5'-W G C C G G A W-3'	ImPyPyImImPy-7-HpPyPyImImPy
	1699)	5'-W G C C G C T W-3'	ImPyPyImPyHp-γ-PyImPyImImPy
	1700)	5'-W G C C G C A W-3'	ImPyPyImPyPy-7-HpImPyImImPy
	1701)	5'-W G C C C T T W-3'	ImPyPyPyHpHp- γ-РуРу ImImIm Py
	1702)	5'-W G C C C T A W-3'	ImРуРуРуНрРу-ү-НрРуImImImРу
	1703)	5'-W G C C C T G W-3'	ImPyPyPyHpIm-y-PyPyImImImPy
	1704)	5'-W G C C C T C W-3'	ImPyPyPyHpPy-y-ImPyImImImPy
	1705)	5'-W G C C C A T W-3'	ImPyPyPyPyHp- γ-РуНр ImImIm Py
	1706)	5'-W G C C C A A W-3'	ImPyPyPyPyPy-γ-HpHpImImImPy
	1707)	5'-W G C C C A G W-3'	ImPyPyPyPyIm-y-PyHpImImImPy
	1708)	5'-W G C C C A C W-3'	ImPyPyPyPyPy-y-ImHpImImImPy
	1709)	5'-W G C C C G T W-3'	ImPyPyPyImHp-y-PyPyImImImPy
	1710)	5'-W G C C C G A W-3'	ImPyPyPyImPy-7-HpPyImImImPy
	1711)	5'-W G C C C C T W-3'	ImPyPyPyPyHp-γ-PyImImImPy
	1712)	5'-W G C C C C A W-3'	ImPyPyPyPyPy- γ-HpImImImPy
	G73)	5'-W G C C G G G W-3'	ImPyPyImImIm-y-PyPyPyImImPy
	G74)	5'-W G C C G G C W-3'	ImPyPyImImPy-7-ImPyPyImImPy
	G75)	5'-W G C C G C G W-3'	ImPyPyImPyIm-y-PyImPyImImPy
	G76)	5'-W G C C G C C W-3'	ImPyPyImPyPy-7-ImImPyImImPy
	G77)	5'-W G C C C G G W-3'	ImPyPyPyImIm-y-PyPyImImImPy
	G78)	5'-W G C C C G C W-3'	ImPyPyPyImPy-7-ImPyImImImPy
	G79)	5'-W G C C C C G W-3'	ImPyPyPyPyIm-y-PyImImImImPy
	G80)	5'-W G C C C C W-3'	ImPyPyPyPyPy-y-ImImImImImPy

 	DNA sequence	r recognition of 8-bp 5'-WGAGWNNW-3' aromatic amino acid sequence
 1713)	5'-W G A G T T T W-3'	
1714)	5'-W G A G T T A W-3'	ІтруІтрирнрнр-ү-Рурурурунрру
1715)	5'-W G A G T T G W-3'	ІтруІтрурурунрру
1716)	5'-W G A G T T C W-3'	ІтруІтриріт-ү-руруруруруру
1717)	5'-W G A G T A T W-3'	ІтруІтрирру-ү-Ітруруруруру
1718)	5'-W G A G T A A W-3'	Ітру Ітру Регундру Мара Ругу Мара
1719)	5'-W G A G T A G W-3'	ІтРуІтнрРуРу-ү-НрНрРуРуНрРу
		ІтРуІтНрРуІт-ү-РуНрРуРуНрРу
1720)	5'-W G A G T A C W-3'	ІтРуІтНрРуРу-ү-ІтНрРуРуНрРу
1721)	5'-W G A G T G T W-3'	ІтРУІтНрІтНр-ү-РуРуРуРуНрРу
1722)	5'-W G A G T G A W-3'	.ІтРуІтНрІтРу-ү-НрРуРуРуНрРу
1723)	5'-W G A G T G G W-3'	ImРуImНрImIm-γ-РуРуРуРуНрРу
1724)	5'-W G A G T G C W-3'	ІтРуІтНрІтРу-ү-ІтРуРуРуНрРу
1725)	5'-W G A G T C T W-3'	ImPyImHpPyHp-y-PyImPyPyHpPy
1726)	5'-W G A G T C A W-3'	ImPyImHpPyPy-7-HpImPyPyHpPy
1727)	5'-W G A G T C G W-3'	ImPyImHpPyIm-y-PyImPyPyHpPy
1728)	5'-W G A G T C C W-3'	${\tt ImPyImHpPyPy-\gamma-ImImPyPyHpPy}$
1729)	5'-W G A G A T T W-3'	ІтРуІтРуНрНр-ү-РуРуНрРуНрРу
1730)	5'-W G A G A T A W-3'	ІтРуІтРунрРу-ү-НрРунрРунрРу
1731)	5'-W G A G A T G W-3'	ІтРуІтРуНрІт-ү-РуРуНрРуНрРу
1732)	5'-W G A G A T C W-3'	ІтРуІтРуНрРу-ү-ІтРуНрРуНрРу
1733)	5'-W G A G A A T W-3'	ІтРуІтРуРуНр-ү-РуНрНрРуНрРу
1734)	5'-W G A G A A A W-3'	ІмРуІмРуРуРу-ү-НрНрНрРуНрРу
1735)	5'-W G A G A A G W-3'	ImPyImPyPyIm-γ-РуНрНрРуНрРу
1736)	5'-W G A G A A C W-3'	ІтРуІтРуРуРу-ү-ІтНрНрРуНрРу
1737)	5'-W G A G A G T W-3'	ІтРуІтРуІтНр-ү-РуРуНрРуНрРу
1738)	5'-W G A G A G A W-3'	ImPyImPyImPy-ү-HpPyHpPyHpPy
1739)	5'-W G A G A G G W-3'	ImPyImPyImIm-7-PyPyHpPyHpPy
1740)	5'-W G A G A G C W-3'	ІтРуІтРуІтРу-ү-ІтРуНрРуНрРу
1741)	5'-W G A G A C T W-3'	ІтРуІтРуРуНр-ү-РуІтНрРуНрРу
1742)	5'-W G A G A C A W-3'	ImPyImPyPyPy-ү~HpImHpPyHpPy
1743)	5'-W G A G A C G W-3'	ImPyImPyPyIm-y-PyImHpPyHpPy
1744)	5'-W G A G A C C W-3'	ImPyImPyPyPy-Y-ImImHpPyHpPy

	Т	ABLE 101: 12-ring Hairpin Polyamides for	recognition of 8-bp 5'-WGAGSNNW-3'
		DNA sequence	aromatic amino acid sequence
	1745)	5'-W G A G G T T W-3'	ImРуImImHpHp-ү-РуРуРуРуНpРу
5	1746)	5'-W G A G G T A W-3'	ImPyImImHpPy- γ-HpРyPyPyHpPy
	1747)	5'-W G A G G T G W-3'	ImРуImImНрIm-ү-РуРуРуРуНрРу
	1748)	5'-W G A G G T C W-3'	ІмРуІмІмНрРу-ү-ІмРуРуРуНрРу
	1749)	5'-W G A G G A T W-3'	ImРуImImРуНр-ү-РуНрРуРуНрРу
	1750)	5'-W G A G G A A W-3'	ImРуImImРуРу-ү-НрНрРуРуНрРу
10	1751)	5'-W G A G G A G W-3'	ImPyImImPyIm-y-PyHpPyPyHpPy
	1752)	5'-W G A G G A C W-3'	ImPyImImPyPy-y-ImHpPyPyHpPy
	1753)	5'-W G A G G G T W-3'	ІтРуІтІтІтр-ү-РуРуРуРуРуРу
	1754)	5'-W G A G G G A W-3'	ImPyImImImPy-ү-HpPyPyPyHpPy
	1755)	5'-W G A G G C T W-3'	ImPyImImPyHp-y-PyImPyPyHpPy
15	1756)	5'-W G A G G C A W-3'	ImPyImImPyPy-y-HpImPyPyHpPy
	1757)	5'-W G A G C T T W-3'	ІтРуІтРуНрНр-ү-РуРуІтРуНрРу
	1758)	5'-W G A G C T A W-3'	ImРуImРуНрРу-ү-НрРуImРуНрРу
	1759)	5'-W G A G C T G W-3'	ImPyImPyHpIm-y-PyPyImPyHpPy
	1760)	5'-W G A G C T C W-3'	ImPyImPyHpPy-y-ImPyImPyHpPy
20	1761)	5'-W G A G C A T W-3'	ІтРуІтРуРуНр-ү-РуНрІтРуНрРу
	1762)	5'-W G A G C A A W-3'	ImPyImPyPyPy-ү-HpHpImPyHpPy
	1763)	5'-W G A G C A G W-3'	${\tt ImPyImPyPyIm-\gamma-PyHpImPyHpPy}$
	1764)	5'-W G A G C A C W-3'	ImPyImPyPyPy-y-ImHpImPyHpPy
	1765)	5'-W G A G C G T W-3'	ImPyImPyImHp-y-PyPyImPyHpPy
25	1766)	5'-W G A G C G A W-3'	ImPyImPyImPy-y-HpPyImPyHpPy
	1767)	5'-W G A G C C T W-3'	ImPyImPyPyHp-γ-PyImImPyHpPy
	1768)	5'-W G A G C C A W-3'	ImPyImPyPyPy-y-HpImImPyHpPy
	1769)	5'-W G A G G G G W-3'	ImPyImImImIm-y-PyPyPyPyHpPy
	1770)	5'-W G A G G G C W-3'	ImPyImImImPy-7-ImPyPyPyHpPy
30	1771)	5'-W G A G G C G W-3'	ImPyImImPyIm-y-PyImPyPyHpPy
	1772)	5'-W G A G G C C W-3'	ImPyImImPyPy-7-ImImPyPyHpPy
	1773)	5'-W G A G C G G W-3'	ImPyImPyImIm-y-PyPyImPyHpPy
	1774)	5'-W G A G C G C W-3'	ImPyImPyImPy-y-ImPyImPyHpPy
	1775)	5'-W G A G C C G W-3'	ImPyImPyPyIm-y-PyImImPyHpPy
35	1776)	5'-W G A G C C C W-3'	ImPyImPyPyPy-y-ImImImPyHpPy

	TA	ABLE 102: 12-ring Hairpin Polyamides for re	ecognition of 8-bp 5'-WGATWNNW-3'
		DNA sequence	aromatic amino acid sequence
	1777)	5'-W G A T T T T W-3'	ІмРуНрНрНр-ү-РуРуРуРуНрРу
5	1778)	5'-W G A T T T A W-3'	ІмРуНрНрРу-ү-НрРуРуРуНрРу
	1779)	5'-W G A T T T G W-3'	ImРуНрНрНрIm-ү-РуРуРуРуНрРу
	1780)	5'-W G A T T T C W-3'	ІмРуНрНрНрРу-ү-ІмРуРуРуНрРу
	1781)	5'-W G A T T A T W-3'	ІшБУНЪНЪБАНЪ-4-БУНЪБАНЪБА
	1782)	5'-W G A T T A A W-3'	ІмРуНрНрРуРу-ү-НрНрРуРуНрРу
10	1783)	5'-W G A T T A G W-3'	ІмРуНрНрРуІм-ү-РуНрРуРуНрРу
	1784)	5'-W G A T T A C W-3'	ІмРуНрНрРуРу-ү-ІмНрРуРуНрРу
	1785)	5'-W G A T T G T W-3'	ІмРуНрНрІмНр-ү-РуРуРуРуНрРу
	1786)	5'-W G A T T G A W-3'	ImРуНрНрImРу-ү-НрРуРуРуНрРу
	1787)	5'-W G A T T G G W-3'	${\tt ImPyHpHpImIm-}\gamma\hbox{-}{\tt PyPyPyPyHpPy}$
15	1788)	5'-W G A T T G C W-3'	ІмРуНрНрІмРу-ү-ІмРуРуРуНрРу
	1789)	5'-W G A T T C T W-3'	ІмРуНрНрРуНр-ү-РуІмРуРуНрРу
	1790)	5'-W G A T T C A W-3'	ІмРуНрНрРуРу-ү-НрІмРуРуНрРу
	1791)	5'-W G A T T C G W-3'	ImPyHpHpPyIm-y-PyImPyPyHpPy
	1792)	5'-W G A T T C C W-3'	ImРуНрНрРуРу-ү-ImImРуРуНрРу
20	1793)	5'-W G A T A T T W-3'	І мРуНрРуНрНр-γ-РуРуНрРуНрРу
	1794)	5'-W G A T A T A W-3'	І mРуНрРуНрРу-γ-НрРуНрРуНрРу
	1795)	5'-W G A T A T G W-3'	ІтРуНрРуНрІт-ү-РуРуНрРуНрРу
	1796)	5'-W G A T A T C W-3'	ImРуНpРуНpРy-ү-ImРуНpРуНpРy
	1797)	5'-W G A T A A T W-3'	ІшБУНЪБАНЪ-4-БАНЪНЪБАНЪБА
25	1798)	5'-W G A T A A A W-3'	ІmРуНpРуРуРу-γ-HpHpHpРуHpРу
	1799)	5'-W G A T A A G W-3'	ІшБУНББАБІШ-4-БАНБББАНББА
	1800)	5'-W G A T A A C W-3'	ImРуНpРуРуРу-ү-ImНpНpРуНpРy
	1801)	5'-W G A T A G T W-3'	ІтРунрРуІтнр-ү-РуРунрРунрРу
	1802)	5'-W G A T A G A W-3'	_. ІmРуНpРуImРу-ү-НpРуНpРуНpРу
30	1803)	5'-W G A T A G G W-3'	ІтРуНрРуІтІт-ү-РуРуНрРуНрРу
	1804)	5'-W G A T A G C W-3'	ImPyHpPyImPy-7-ImPyHpPyHpPy
	1805)	5'-W G A T A C T W-3'	ІтРунрРуРунр-ү-РуІтнрРунрРу
	1806)	5'-W G A T A C A W-3'	ІтРунрРуРуРу-ү-НрІтнрРунрРу
	1807)	5'-W G A T A C G W-3'	ІтРуНрРуРуІт-ү-РуІтНрРуНрРу
35	1808)	5'-W G A T A C C W-3'	ІтРунрРуРуРу-ү-ІтІтнрРунрРу

	TABLE 103: 12-ring Hairpin Polyamides for recognition of 8-bp 5'-WGATSNNW-3'		
		DNA sequence	aromatic amino acid sequence
	1809)	5'-W G A T G T T W-3'	ІмРуНрІмНрНр-ү-РуРуРуРуНрРу
5	1810)	5'-W G A T G T A W-3'	ІшБУНБІШНББА-4-НББАБАНББА
	1811)	5'-W G A T G T G W-3'	ІмРуНрІмНрІм-ү-РуРуРуРуНрРу
	1812)	5'-W G A T G T C W-3'	ІмРуНрІмНрРу-ү-ІмРуРуРуНрРу
	1813)	5'-W G A T G A T W-3'	ІмРуНрІмРуНр-ү-РуНрРуРуНрРу
	1814)	5'-W G A T G A A W-3'	ІмРуНрІмРуРу-ү-НрНрРуРуНрРу
10	1815)	5'-W G A T G A G W-3'	ІшБУНБІшБУІш-7-БУНББУБАНББА
	1816)	5'-W G A T G A C W-3'	ІмРуНрІмРуРу-ү-ІмНрРуРуНрРу
	1817)	5'-W G A T G G T W-3'	ІтРунрітітнр-ү-РуРуРуРуРу
	1818)	5'-W G A T G G A W-3'	ImРуНрІmІmРу-ү-НрРуРуРуНрРу
	1819)	5'-W G A T G C T W-3'	ІшБУНБІшБУНБ-А-БАІшБАБАН
15	1820)	5'-W G A T G C A W-3'	ImРуНрImРуРу-ү-НрImРуРуНрРу
	1821)	5'-W G A T G G G W-3'	ІтРуНрІтІтіт-ү-РуРуРуРуНрРу
	1822)	5'-W G A T G G C W-3'	${\tt ImPyHpImImPy-\gamma-ImPyPyPyHpPy}$
	1823)	5'-W G A T G C G W-3'	${\tt ImPyHpImPyIm-\gamma-PyImPyPyHpPy}$
	1824)	5'-W G A T G C C W-3'	${\tt ImPyHpImPyPy-\gamma-ImImPyPyHpPy}$
20	1825)	5'-W G A T C T T W-3'	ІтРунрРунрнр-ү-РуРуІтРунрРу
	1826)	5'-W G A T C T A W-3'	ІмРуНрРуНрРу-ү-НрРуІмРуНрРу
	1827)	5'-W G A T C T G W-3'	ImPyHpPyHpIm-γ-РуРуІmРуHpP γ
	1828)	5'-W G A T C T C W-3'	ІмРуНрРуНрРу-ү-ІмРуІмРуНрРу
	1829)	5'-W G A T C A T W-3'	ІмРуНрРуРуНр-ү-РуНрІмРуНрРу
25	1830)	5'-W G A T C A A W-3'	І mРуНрРуРуРу-γ-НрНрІmРуНрРу
	1831)	5'-W G A T C A G W-3'	$\stackrel{\cdot}{\text{ImPyHpPyPyIm-}\gamma\text{-PyHpImPyHpPy}}$
	1832)	5'-W G A T C A C W-3'	ImPyHpРyPyPy-γ-ImHpImPyHpPy
	1833)	5'-W G A T C G T W-3'	${\tt ImPyHpPyImHp-\gamma-PyPyImPyHpPy}$
	1834)	5'-W G A T C G A W-3'	ІмРуНрРуІмРу-ү-НрРуІмРуНрРу
30	1835)	5'-W G A T C C T W-3'	${\tt ImPyHpPyPyHp-\gamma-PyImImPyHpPy}$
	1836)	5'-W G A T C C A W-3'	${\tt ImPyHpPyPyPy-\gamma-HpImImPyHpPy}$
	1837)	5'-W G A T C G G W-3'	ІтРунрРуІтіт-ү-РуРуІтРунрРу
	1838)	5'-W G A T C G C W-3'	ImPyHpPyImPy-γ-ImPyImPyHpPy
	1839)	5'-W G A T C C G W-3'	ImРуНрРуРуIm-ү-РуImImРуНрРу
35	1840)	5'-W G A T C C C W-3'	ImPyHpPyPyPy-γ-ImImImPyHpPy

	TA	ABLE 104: 12-ring Hairpin Polyamides for re	ecognition of 8-bp 5'-WGAAWNNW-3'
-		DNA sequence	aromatic amino acid sequence
	1841)	5'-W G A A T T T W-3'	ІтРуРуНрНрНр-ү-РуРуРуНрНрРу
5	1842)	5'-W G A A T T A W-3'	ІшБУБУНрНрБУ-7-НрБУБУНрНрБУ
	1843)	5'-W G A A T T G W-3'	ІшБУБУНФНБІш-4-БУБУБУНФНББА
	1844)	5'-W G A A T T C W-3'	ІшБУБАНБНББА-1-1шБУБАНБББА
	1845)	5'-W G A A T A T W-3'	ІтРуРуНрРуНр-ү-РуНрРуНрНрРу
	1846)	5'-W G A A T A A W-3'	ІшБАБАНББАБА
10	1847)	5'-W G A A T A G W-3'	ІтРуРуНрРуІт-ү-РуНрРуНрНрРу
	1848)	5'-W G A A T A C W-3'	ІтРуРуНрРуРу-ү-ІтНрРуНрНрРу
	1849)	5'-W G A A T G T W-3'	ІтРуРуНрІтНр-ү-РуРуРуНрНрРу
	1850)	5'-W G A A T G A W-3'	ІтРуРуНрІтРу-ү-НрРуРуНрНрРу
	1851)	5'-W G A A T G G W-3'	ІтРуРуНрІтіт-ү-РуРуРуНрНрРу
15	1852)	5'-W G A A T G C W-3'	ІтРуРуНрІтРу-ү-ІтРуРуНрНрРу
	1853)	5'-W G A A T C T W-3'	ІшБУБУНФБУНФ-7-БУІшБУНФНФБР
	1854)	5'-W G A A T C A W-3'	ІшБУБАНББАБА - А-НБІШБАНББА
	1855)	5'-W G A A T C G W-3'	ImPyPyHpPyIm-y-PyImPyHpHpPy
	1856)	5'-W G A A T C C W-3'	ІтРуРуНрРуРу-ү-ІтІтРуНрНрРу
20	1857)	5'-W G A A A T T W-3'	ІтРуРуРуНрНр-ү-РуРуНрНрНрРу
	1858)	5'-W G A A A T A W-3'	ІтРуРуРуНрРу-ү-НрРуНрНрРу
	1869)	5'-W G A A A T G W-3'	ІтРуРуРуНрІт-ү-РуРуНрНрНрРу
	1860)	5'-W G A A A T C W-3'	ІтРуРуРуНрРу-ү-ІтРуНрНрРРу
	1861)	5'-W G A A A A T W-3'	ІтРуРуРуРуНр-ү-РуНрНрНрРРу
25	1862)	5'-W G A A A A A W-3'	ІшБУБУБУБУБУ-7-НЪНЪНЪНЪБЪ
	1863)	5'-W G A A A A G W-3'	ImРуРуРуРуIm-ү-РуНрНрНрРу
	1864)	5'-W G A A A A C W-3'	ІтРуРуРуРуРу-ү-ІтНрНрНрНрРу
	1865)	5'-W G A A A G T W-3'	ІтРуРуРуІтНр-ү-РуРуНрНрРр
	1866)	5'-W G A A A G A W-3'	ImPyPyPyImPy-7-HpPyHpHpHpPy
30	1867)	5'-W G A A A G G W-3'	ImPyPyPyImIm-7-PyPyHpHpHpPy
	1868)	5'-W G A A A G C W-3'	ImPyPyPyImPy-7-ImPyHpHpHpPy
	1869)	5'-W G A A A C T W-3'	ІтРурурурунр-ү-РуІтнрнрнрру
	1870)	5'-W G A A A C A W-3'	ІтРуруруруру-ү-НрІтНрНрНрРу
	1871)	5'-W G A A A C G W-3'	ІмРуРуРуРуІм-ү-РуІмНрНрНрРу
35	1872)	5'-W G A A A C C W-3'	ІшБУБУБУБУБУ-1-ІшІшНБНБНББР

_	Т	ABLE 105: 12-ring Hairpin Polyamides for	or recognition of 8-bp 5'-WGAASNNW-3'
=		DNA sequence	aromatic amino acid sequence
	1873)	5'-W G A A G T T W-3'	ІшБАБАТ ТАТАТ ТАТАТАТАТАТАТАТАТАТАТАТАТАТА
5	1874)	5'-W G A A G T A W-3'	ІмРуРуІмНрРу-ү-НрРуРуНрНрРу
	1875)	5'-W G A A G T G W-3'	ІтРуРуІтНрІт-ү-РуРуРуНрНрРу
	1876)	5'-W G A A G T C W-3'	ІтРуРуІтНрРу-ү-ІтРуРуНрНрРу
	1877)	5'-W G A A G A T W-3'	ImРуРуІmРуНр-ү-РуНрРуНрРр
	1878)	5'-W G A A G A A W-3'	ImРуРуImРуРу-γ-НрНрРуНрНрРу
10	1879)	5'-W G A A G A G W-3'	ImРуРуImРуIm-ү-РуНрРуНрНрРу
	1880)	5'-W G A A G A C W-3'	ІтРуРуІтРуРу-ү-ІтНрРуНрНрРу
	1881)	5'-W G A A G G T W-3'	ІтРуРуІтІтр-ү-РуРуРуНрНрРу
	1882)	5'-W G A A G G A W-3'	ІтРуРуІтІтРу-ү-НрРуРуНрНрРу
	1883)	5'-W G A A G C T W-3'	ІтРуРуІтРуНр-ү-РуІтРуНрНрРу
15	1884)	5'-W G A A G C A W-3'	ІтРуРуІтРуРу-ү-НрІтРуНрНрРу
	1885)	5'-W G A A G G G W-3'	ImPyPyImImIm-ү-РуРуРуНрНpРy
	1886)	5'-W G A A G G C W-3'	ImРуРуІmІmРу-ү-ІmРуРуНрНpРу
	1887)	5'-W G A A G C G W-3'	ІтРуРуІтРуІт-ү-РуІтРуНрРу
	1888)	5'-W G A A G C C W-3'	ІтРуРуІтРуРу-ү-ІтІтРуНрРр
20	1889)	5'-W G A A C T T W-3'	ІтРуРуРуНрНр-ү-РуРуІтНрНрРу
	1890)	5'-W G A A C T A W-3'	ІмРуРуРуНрРу-ү-НрРуІмНрНрРу
	1891)	5'-W G A A C T G W-3'	ImРуРуРуНрIm-γ-РуРуІmНрНрРу
	1892)	5'-W G A A C T C W-3'	ІмРуРуРуНрРу-ү-ІмРуІмНрНрРу
	1893)	5'-W G A A C A T W-3'	ІтРуРуРуРуНр-ү-РуНрІтНрНрРу
25	1894)	5'-W G A A C A A W-3'	ІтРуРуРуРуРу-ү-НрНрІтНрНрРу
	1895)	5'-W G A A C A G W-3'	${\tt ImPyPyPyPyIm-\gamma-PyHpImHpHpPy}$
	1896)	5'-W G A A C A C W-3'	ІтРуРуРуРуРу-ү-ІтНрІтНрНрРу
	1897)	5'-W G A A C G T W-3'	ІтРуРуРуІтНр-ү-РуРуІтНрНрРу
	1898)	5'-W G A A C G A W-3'	ІтРуРуРуІтРу-ү-НрРуІтНрНрРу
30	1899)	5'-W G A A C C T W-3'	ІтРуРуРуРуНр-ү-РуІтІтНрНрРу
		5'-W G A A C C A W-3'	ImРуРуРуРуРу-ү-НрImImНpНpРy
		5'-W G A A C G G W-3'	ImPyPyPyImIm-y-PyPyImHpHpPy
		5'-W G A A C G C W-3'	ImРуРуРуImРу-ү-ImРуImНрНрРу
	1903)	5'-W G A A C C G W-3'	ImРуРуРуРуIm-ү-РуImImHpHpРу
35	1904)	5'-W G A A C C C W-3'	Ӏ ѭҎуҎуҎуРуРу-γ- Ӏ ѭӀѭӀѭ₽

_	T	ABLE 106: 12-ring Hairpin Polyamides for re	ecognition of 8-bp 5'-WGACWNNW-3'
==		DNA sequence	aromatic amino acid sequence
	1905)	5'-W G A C T T T W-3'	ІтРуРуНрНрНр-ү-РуРуРуІтНрРу
5	1906)	5'-W G A C T T A W-3'	ІтРуРуНрНрРу-ү-НрРуРуІтНрРу
	1907)	5'-W G A C T T G W-3'	ImРуРуНрНрIm-γ-РуРуРуІmНpРу
	1908)	5'-W G A C T T C W-3'	ІтРуРуНрНрРу-ү-ІтРуРуІтНрРу
	1909)	5'-W G A C T A T W-3'	ІтРуРуНрРуНр-ү-РуНрРуІтНрРу
	1910)	5'-W G A C T A A W-3'	ІтРуРуНрРуРу-ү-НрНрРуІтНрРу
10	1911)	5'-W G A C T A G W-3'	ІтРуРуНрРуІт-ү-РуНрРуІтНрРу
	1912)	5'-W G A C T A C W-3'	ІтРуРуНрРуРу-ү-ІтНрРуІтНрРу
	1913)	5'-W G A C T G T W-3'	ІтРуРуНрІтНр-ү-РуРуРуІтНрРу
	1914)	5'-W G A C T G A W-3'	ІмРуРуНрІмРу-ү-НрРуРуІмНрРу
	1915)	5'-W G A C T G G W-3'	ІтРуРуНрІтіт-ү-РуРуРуІтНрРу
15	1916)	5'-W G A C T G C W-3'	ІтРуРуНрІтРу-ү-ІтРуРуІтНрРу
	1917)	5'-W G A C T C T W-3'	ІтРуРуНрРуНр-ү-РуІтРуІтНрРу
	1918)	5'-W G A C T C A W-3'	ІтРуРуНрРуРу-ү-НрІтРуІтНрРу
	1919)	5'-W G A C T C G W-3'	ImPyPyHpPyIm-y-PyImPyImHpPy
	1920)	5'-W G A C T C C W-3'	ImPyPyHpPyPy-y-ImImPyImHpPy
20	1921)	5'-W G A C A T T W-3'	ІтРуРуРуНрНр-ү-РуРуНрІтНрРу
	1922)	5'-W G A C A T A W-3'	ІшБУБУБУНББА-4-НББАНБББА
	1923)	5'-W G A C A T G W-3'	ImPyPyPyHpIm-y-PyPyHpImHpPy
	1924)	5'-W G A C A T C W-3'	${\tt ImPyPyPyHpPy-\gamma-ImPyHpImHpPy}$
	1925)	5'-W G A C A A T W-3'	ІшБУБАБАТЬ ТАТРАТЬ І ТАТРАТЬ І ТОТОТЬ І
25	1926)	5'-W G A C A A A W-3'	ІшБУБУБУБУБУ-7-НЪНЪНЪІШНЪБУ
	1927)	5'-W G A C A A G W-3'	$\stackrel{\cdot}{\text{ImPyPyPyPyIm}}$ - γ -PyHpHpImHpPy
	1928)	5'-W G A C A A C W-3'	${\tt ImPyPyPyPyPy-\gamma-ImHpHpImHpPy}$
	1929)	5'-W G A C A G T W-3'	${\tt ImPyPyPyImHp-\gamma-PyPyHpImHpPy}$
	1930)	5'-W G A C A G A W-3'	${\tt ImPyPyPyImPy-\gamma-HpPyHpImHpPy}$
30	1931)	5'-W G A C A G G W-3'	ImPyPyPyImIm-γ-PyPyHpImHpPy
	1932)	5'-W G A C A G C W-3'	ImPyPyPyImPy-7-ImPyHpImHpPy
	1933)	5'-W G A C A C T W-3'	${\tt ImPyPyPyPyHp-\gamma-PyImHpImHpPy}$
	1934)	5'-W G A C A C A W-3'	ІтРуРуРуРуРу-ү-НрІтНрІтНрРу
	1935)	5'-W G A C A C G W-3'	ImPyPyPyPyIm-y-PyImHpImHpPy
35	1936)	5'-W G A C A C C W-3'	${\tt ImPyPyPyPyPy-\gamma-ImImHpImHpPy}$

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-	TA	ABLE 107: 12-ring Hairpin Polyamides for re	ecognition of 8-bp 5'-WGACSNNW-3'
=		DNA sequence	aromatic amino acid sequence
	1937)	5'-W G A C G T T W-3'	${\tt ImPyPyImHpHp-\gamma-PyPyPyImHpPy}$
5	1938)	5'-W G A C G T A W-3'	ImPyPyImHpPy-7-HpPyPyImHpPy
	1939)	5'-W G A C G T G W-3'	ImPyPyImHpIm-y-PyPyPyImHpPy
	1940)	5'-W G A C G T C W-3'	ImPyPyImHpPy-y-ImPyPyImHpPy
	1941)	5'-W G A C G A T W-3'	ImРуРуImРуНр-ү-РуНрРуImНрРу
	1942)	5'-W G A C G A A W-3'	ImPyPyImPyPy-7-HpHpPyImHpPy
10	1943)	5'-W G A C G A G W-3'	ImPyPyImPyIm-y-PyHpPyImHpPy
	1944)	5'-W G A C G A C W-3'	ІтРуРуІтРуРу-ү-ІтНрРуІтНрРу
	1945)	5'-W G A C G G T W-3'	ІтРуРуІтІтНр-ү-РуРуРуІтНрРу
	1946)	5'-W G A C G G A W-3'	ImPyPyImImPy-7-HpPyPyImHpPy
	1947)	5'-W G A C G C T W-3'	ImPyPyImPyHp-y-PyImPyImHpPy
15	1948)	5'-W G A C G C A W-3'	ImPyPyImPyPy-7-HpImPyImHpPy
	1949)	5'-W G A C C T T W-3'	ІтРуРуРуНрНр-ү-РуРуІтІтНрРу
	1950)	5'-W G A C C T A W-3'	ІтРуРуРуНрРу-ү-НрРуІтІтНрРу
	1951)	5'-W G A C C T G W-3'	ImPyPyPyHpIm-y-PyPyImImHpPy
	1952)	5'-W G A C C T C W-3'	ImPyPyPyHpPy-y-ImPyImImHpPy
20	1953)	5'-W G A C C A T W-3'	ІmРуРуРуРуНр-ү-РуНрІmІmНpРу
	1954)	5'-W G A C C A A W-3'	ІтРуРуРуРуРу-ү-НрНрІтПтНрРу
	1955)	5'-W G A C C A G W-3'	ImPyPyPyPyIm-y-PyHpImImHpPy
	1956)	5'-W G A C C A C W-3'	${\tt ImPyPyPyPyPy-\gamma-ImHpImImHpPy}$
	1957)	5'-W G A C C G T W-3'	ImPyPyPyImHp-y-PyPyImImHpPy
25	1958)	5'-W G A C C G A W-3'	ImPyPyPyImPy-7-HpPyImImHpPy
	1959)	5'-W G A C C C T W-3'	$\stackrel{\cdot}{\text{ImPyPyPyPyHp-}\gamma-PyImImImHpPy}$
	1960)	5'-W G A C C C A W-3'	ImPyPyPyPyPy-y-HpImImImHpPy
	1961)	5'-W G A C G G G W-3'	ImPyPyImImIm-y-PyPyPyImHpPy
	1962)	5'-W G A C G G C W-3'	ImPyPyImImPy-7-ImPyPyImHpPy
30	1963)	5'-W G A C G C G W-3'	ImPyPyImPyIm-y-PyImPyImHpPy
	1964)	5'-W G A C G C C W-3'	ImPyPyImPyPy-7-ImImPyImHpPy
	1965)	5'-W G A C C G G W-3'	ImPyPyPyImIm-7-PyPyImImHpPy
	1966)	5'-W G A C C G C W-3'	ImPyPyPyImPy-7-ImPyImImHpPy
	1967)	5'-W G A C C C G W-3'	ImPyPyPyPyIm-y-PyImImImHpPy
35	1968)	5'-W G A C C C C W-3'	ImPyPyPyPyPy-y-ImImImImHpPy

	TA	ABLE 108: 12-ring Hairpin Polyamides for	recognition of 8-bp 5'-WGTGWNNW-3'
		DNA sequence	aromatic amino acid sequence
	1969)	5'-W G T G T T T W-3'	ІтнрІтнрнрнр-ү-РуРуРуРуРуРу
5	1970)	5'-W G T G T T A W-3'	ІтнрІтнрнрРу-ү-нрРуРуРуРуРу
	1971)	5'-W G T G T T G W-3'	Ітнрітнрнріт-ү-РуРуРуРуРуРу
	1972)	5'-W G T G T T C W-3'	Ітнр Ітнр НрРу-ү-ІтРуРуРуРуРу
	1973)	5'-W G T G T A T W-3'	ІшНрІшНрРуНр-ү-РуНрРуРуРуРу
	1974)	5'-W G T G T A A W-3'	ІтнрІтнрРуРу-ү-нрнрРуРуРуРу
10	1975)	5'-W G T G T A G W-3'	ІмНрІмНрРуІм-ү-РуНрРуРуРуРу
	1976)	5'-W G T G T A C W-3'	ІтнрІтнрРуРу-ү-ІтнрРуРуРуРу
	1977)	5'-W G T G T G T W-3'	ІтНрІтНрІтНр-ү-РуРуРуРуРуРу
	1978)	5'-W G T G T G A W-3'	ImHpImHpImPy-7-HpPyPyPyPyPy
	1979)	5'-W G T G T G G W-3'	ImHpImHpImIm-ү-РуРуРуРуРуРу
15	1980)	5'-W G T G T G C W-3'	ImHpImHpImPy-y-ImPyPyPyPyPy
	1981)	5'-W G T G T C T W-3'	ІтНрІтНрРуНр-ү-РуІтРуРуРуРу
	1982)	5'-W G T G T C A W-3'	ImHpImHpPyPy-ү-HpImPyPyPyPy
	1983)	5'-W G T G T C G W-3'	ImHpImHpPyIm-7-PyImPyPyPyPy
	1984)	5'-W G T G T C C W-3'	ImHpImHpPyPy-y-ImImPyPyPyPy
20	1985)	5'-W G T G A T T W-3'	ІтнрІтРунрнр-ү-РуРунрРуРуРу
	1986)	5'-W G T G A T A W-3'	ImHpImРуHpРy-ү-HpРуHpРуРуРу
	1987)	5'-W G T G A T G W-3'	ІтНрІтРуНрІт-ү-РуРуНрРуРуРу
	1988)	5'-W G T G A T C W-3'	ІтНрІтРуНрРу-ү-ІтРуНрРуРуРу
	1989)	5'-W G T G A A T W-3'	ІтНрІтРуРуНр-ү-РуНрНрРуРуРу
25	1990)	5'-W G T G A A A W-3'	ІшНрІшБУРУРУ-7-НрНрНрБУРУРУ
	1991)	5'-W G T G A A G W-3'	ІmНpІmРyРyІm-ү-РуНpНpРyРyРy
	1992)	5'-W G T G A A C W-3'	ImHpImPyPyPy-7-ImHpHpPyPyPy
	1993)	5'-W G T G A G T W-3'	ІмНрІмРуІмНр-ү-РуРуНрРуРуРу
	1994)	5'-W G T G A G A W-3'	ImHpImPyImPy-7-HpPyHpPyPyPy
30	1995)	5'-W G T G A G G W-3'	ImHpImPyImIm-ү-РуРуНрРуРуРу
	1996)	5'-W G T G A G C W-3'	ImHpImPyImPy-7-ImPyHpPyPyPy
	1997)	5'-W G T G A C T W-3'	ImHpImPyPyHp-y-PyImHpPyPyPy
	1998)	5'-W G T G A C A W-3'	ImHpImPyPyPy-y-HpImHpPyPyPy
	1999)	5'-W G T G A C G W-3'	ImHpImPyPyIm-y-PyImHpPyPyPy
35	2000)	5'-W G T G A C C W-3'	ImHpImPyPyPy-y-ImImHpPyPyPy

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	TABLE 10	09: 12-ring Hairpin Polyamides for recognit	ion of 8-bp 5'-WGTGSNNW-3'
		DNA sequence	aromatic amino acid sequence
	2001)	5'-W G T G G T T W-3'	ImHpImImHpHp-γ-РуРуРуРуРуРу
5	2002)	5'-W G T G G T A W-3'	ІмНрІмІмНрРу-ү-НрРуРуРуРуРу
	2003)	5'-W G T G G T G W-3'	ІмНрІмімНрім-ү-РуРуРуРуРуРу
	2004)	5'-W G T G G T C W-3'	ІшНрІшІшНрРу-ү-ІшРуРуРуРуРу
	2005)	5'-W G T G G A T W-3'	ImHpImImPyHp-γ-РуHpРуРуРу Ру
	2006)	5'-W G T G G A A W-3'	ImHpImImPyPy-ү-HpHpPyPyPyPy
10	2007)	5'-W G T G G A G W-3'	ІтНрІтітРуіт-ү-РуНрРуРуРуРу
	2008)	5'-W G T G G A C W-3'	ImHpImImPyPy-y-ImHpPyPyPyPy
	2009)	5'-W G T G G G T W-3'	${\tt ImHpImImImHp-\gamma-PyPyPyPyPyPyPy}$
	2010)	5'-W G T G G G A W-3'	ImHpImImPy-7-HpPyPyPyPyPy
	2011)	5'-W G T G G C T W-3'	ImHpImImPyHp-y-PyImPyPyPyPy
15	2012)	5'-W G T G G C A W-3'	ImHpImImPyPy-y-HpImPyPyPyPy
	2013)	5'-W G T G C T T W-3'	${\tt ImHpImPyHpHp-\gamma-PyPyImPyPyPy}$
	2014)	5'-W G T G C T A W-3'	ImHpImPyHpPy-7-HpPyImPyPyPy
	2015)	5'-W G T G C T G W-3'	ImHpImPyHpIm-y-PyPyImPyPyPy
	2016)	5'-W G T G C T C W-3'	ImHpImPyHpPy-y-ImPyImPyPyPy
20	2017)	5'-W G T G C A T W-3'	ImHpImPyPyHp-y-PyHpImPyPyPy
	2018)	5'-W G T G C A A W-3'	ImHpImPyPyPy-y-HpHpImPyPyPy
	2019)	5'-W G T G C A G W-3'	ImHpImPyPyIm-y-PyHpImPyPyPy
	2020)	5'-W G T G C A C W-3'	${\tt ImHpImPyPyPy-\gamma-ImHpImPyPyPy}$
	2021)	5'-W G T G C G T W-3'	ImHpImPyImHp-y-PyPyImPyPyPy
25	2022)	5'-W G T G C G A W-3'	ImHpImPyImPy-7-HpPyImPyPyPy
	2023)	5'-W G T G C C T W-3'	${\tt ImHpImPyPyHp-\gamma-PyImImPyPyPy}$
	2024)	5'-W G T G C C A W-3'	ImHpImPyPyPy-y-HpImImPyPyPy
	2025)	5'-W G T G G G G W-3'	${\tt ImHpImImImIm-\gamma-PyPyPyPyPyPy}$
	2026)	5'-W G T G G G C W-3'	ImHpImImTmPy-7-ImPyPyPyPyPy
30	2027)	5'-W G T G G C G W-3'	ImHpImImPyIm-y-PyImPyPyPyPy
	2028)	5'-W G T G G C C W-3'	ImHpImImPyPy-y-ImImPyPyPyPy
	2029)	5'-W G T G C G G W-3'	ImHpImPyImIm-7-PyPyImPyPyPy
	2030)	5'-W G T G C G C W-3'	ImHpImPyImPy-7-ImPyImPyPyPy
	2031)	5'-W G T G C C G W-3'	ImHpImPyPyIm-y-PyImImPyPyPy
35	2032)	5'-W G T G C C C W-3'	ImHpImPyPyPy-y-ImImImPyPyPy

	TA	ABLE 110: 12-ring Hairpin Polyamides for re	ecognition of 8-bp 5'-WGTTWNNW-3'
- المراجع		DNA sequence	aromatic amino acid sequence
	2033)	5'-W G T T T T W-3'	ІмНрНрНрНр-ү-РуРуРуРуРу
5	2034)	5'-W G T T T T A W-3'	ІшНрнрнрнрру-ү-нрРуруруруру
	2035)	5'-W G T T T T G W-3'	ІшНрНрНрІш-ү-РуРуРуРуРуРу
	2036)	5'-W G T T T C W-3'	ІмНрНрНрРу-ү-ІмРуРуРуРуРу
	2037)	5'-W G T T T A T W-3'	ІмНрНрНрРуНр-ү-РуНрРуРуРуРу
	2038)	5'-W G T T T A A W-3'	І мНрНрРуРу-ү-НрНрРуРуРуРу
10	2039)	5'-W G T T T A G W-3'	ІтНрНрНрРуІт-ү-РуНрРуРуРуРу
	2040)	5'-W G T T T A C W-3'	Ітнрнрнрруру-ү-Ітнрруруруру
	2041)	5'-W G T T T G T W-3'	ІшНрНрНрІшНр-ү-РуРуРуРуРуРу
	2042)	5'-W G T T T G A W-3'	Ітнрнрнрітру-ү-нрРуРуРуРуРу
	2043)	5'-W G T T T G G W-3'	ІшНрНрНрІшІш-ү-БУБУБУБУБУБУ
15	2044)	5'-W G T T T G C W-3'	ІтНрНрНрІтРу-ү-ІтРуРуРуРуРу
	2045)	5'-W G T T T C T W-3'	ІшНрНрНрРуНр-ү-РуІшРуРуРуРу
	2046)	5'-W G T T T C A W-3'	Ітнрнрнрруру-ү-нрітруруруру
	2047)	5'-W G T T T C G W-3'	ІтНрНрНрРуІт-ү-РуІтРуРуРуРу
	2048)	5'-W G T T T C C W-3'	Ітнрнрнрруру-ү-Ітптруруруру
20	2049)	5'-W G T T A T T W-3'	ІтнрнрРунрнр-ү-РуРунрРуРуРу
	2050)	5'-W G T T A T A W-3'	ІшНрНрРуНрРу-ү-НрРуНрРуРуРу
	2051)	5'-W G T T A T G W-3'	ІтнрнрРунрІт-ү-РуРунрРуРуРу
	2052)	5'-W G T T A T C W-3'	Ітнрнррунрру-ү-Ітрунрруруру
	2053)	5'-W G T T A A T W-3'	ІмНрНрРуРуНр-ү-РуНрНрРуРуРу
25	2054)	5'-W G T T A A A W-3'	ImHpHpPyPyPy-y-HpHpHpPyPyPy
	2055)	5'-W G T T A A G W-3'	ІмНрНрРуРуІм-ү-РуНрНрРуРуРу
	2056)	5'-W G T T A A C W-3'	ІмНрНрРуРуРу-ү-ІмНрНрРуРуРу
	2057)	5'-W G T T A G T W-3'	ІмНрНрРуІмНр-ү-РуРуНрРуРуРу
	2058)	5'-W G T T A G A W-3'	ІшНрНрРуІшРу-ү-НрРуНрРуРуРу
30	2059)	5'-W G T T A G G W-3'	ImHpHpPyImIm-y-PyPyHpPyPyPy
	2060)	5'-W G T T A G C W-3'	${\tt ImHpHpPyImPy-\gamma-ImPyHpPyPyPy}$
	2061)	5'-W G T T A C T W-3'	ІшНрНрРуРуНр-ү-РуІшНрРуРуРу
	2062)	5'-W G T T A C A W-3'	ІмНрНрРуРуРу-ү-НрІмНрРуРуРу
	2063)	5'-W G T T A C G W-3'	ImHpHpPyPyIm-y-PyImHpPyPyPy
35	2064)	5'-W G T T A C C W-3'	ImHpHpPyPyPy-y-ImImHpPyPyPy

-	TABLE 111: 12-ring Hairpin Polyamides fo	r recognition of 8-bp 5'-WGTTSNNW-3'
=	DNA sequence	aromatic amino acid sequence
	2065) 5'-W G T T G T T W-3'	ІмНрНрІмНрНр-ү-РуРуРуРуРуРу
5	2066) 5'-W G T T G T A W-3'	ІтнрнрітнрРу-ү-нрРуРуРуРуРу
	2067) 5'-W G T T G T G W-3'	ІтНрНрІтНрІт-ү-РуРуРуРуРуРуРу
	2068) 5'-W G T T G T C W-3'	ImHpHpImHpPy-ү-ImPyPyPyPyPyPy
	2069) 5'-W G T T G A T W-3'	ІтнрнрІтРунр-ү-РунрРуРуРуРу
	2070) 5'-W G T T G A A W-3'	ІтнрнрІтРуРу-ү-нрнрРуРуРуРу
10	2071) 5'-W G T T G A G W-3'	ІтнрнрІтРуІт-ү-РунрРуРуРуРу
	2072) 5'-W G T T G A C W-3'	ImHpHpImPyPy- γ- ImHpPyPyPyPy
	2073) 5'-W G T T G G T W-3'	${\tt ImHpHpImImHp-}\gamma\hbox{-}{\tt PyPyPyPyPyPy}$
	2074) 5'-W G T T G G A W-3'	ІтНрНрІтІтРу-ү-НрРуРуРуРуРу
	2075) 5'-W G T T G C T W-3'	ІmНpНpІmРyНp-ү-РуІmРyРyРyРy
15	2076) 5'-W G T T G C A W-3'	ІтНрНрІтРуРу-ү-НрІтРуРуРуРу
	2077) 5'-W G T T G G G W-3'	ImHpHpImImIm-7-PyPyPyPyPyPy
	2078) 5'-W G T T G G C W-3'	${\tt ImHpHpImImPy-\gamma-ImPyPyPyPyPy}$
	2079) 5'-W G T T G C G W-3'	ImHpHpImPyIm-y-PyImPyPyPyPy
	2080) 5'-W G T T G C C W-3'	Ітнрнрітруру-ү-Ітітруруруру
20	2081) 5'-W G T T C T T W-3'	ІмНрНрРуНрНр-ү-РуРуІмРуРуРу
	2082) 5'-W G T T C T A W-3'	ІмНрНрРуНрРу-ү-НрРуІмРуРуРу
	2083) 5'-W G T T C T G W-3'	ІмНрНрРуНрІм-ү-РуРуІмРуРуРу
	2084) 5'-W G T T C T C W-3'	ІтнрнрРунрРу-ү-ІтРуІтРуРуРу
	2085) 5'-W G T T C A T W-3'	ІмНрНрРуРуНр-ү-РуНрІмРуРуРу
25	2086) 5'-W G T T C A A W-3'	${\tt ImHpHpPyPyPy-\gamma-HpHpImPyPyPy}$
	2087) 5'-W G T T C A G W-3'	$\stackrel{\cdot}{\text{ImHpHpPyPyIm-}\gamma\text{-PyHpImPyPyPy}}$
	2088) 5'-W G T T C A C W-3'	ІмНрНрРуРуРу-ү-ІмНрІмРуРуРу
	2089) 5'-W G T T C G T W-3'	${\tt ImHpHpPyImHp-\gamma-PyPyImPyPyPy}$
	2090) 5'-W G T T C G A W-3'	${\tt ImHpHpPyImPy-}\gamma{\tt -HpPyImPyPyPy}$
30	2091) 5'-W G T T C C T W-3'	${\tt ImHpHpPyPyHp-\gamma-PyImImPyPyPy}$
	2092) 5'-W G T T C C A W-3'	ImHpHpPyPyPy-y-HpImImPyPyPy
	2093) 5'-W G T T C G G W-3'	ImHpHpPyImIm-y-PyPyImPyPyPy
	2094) 5'-W G T T C G C W-3'	ImHpHpPyImPy-y-ImPyImPyPyPy
	2095) 5'-W G T T C C G W-3'	ImHpHpPyPyIm-y-PyImImPyPyPy
35	2096) 5'-W G T T C C C W-3'	ІмНрНрРуРуРу-ү-ІмІмПмРуРуРу

		for recognition of 8-bp 5'-WGTAWNNW-3'
	DNA sequence	aromatic amino acid sequence
	2097) 5'-W G T A T T T W-3'	. ІтнрРуНрНрнр-ү-РуРуРуНрРуРу
5	2098) 5'-W G T A T T A W-3'	ІмНрРуНрНрРу-ү-НрРуРуНрРуРу
	2099) 5'-W G T A T T G W-3'	ІмНрРуНрНрІм-ү-РуРуРуНрРуРу
	2100) 5'-W G T A T T C W-3'	ІтнрРунрнрРу-ү-ІтРуРунрРуРу
	2101) 5'-W G T A T A T W-3'	ІтнрРунрРунр-ү-РунрРунрРуРу
	2102) 5'-W G T A T A A W-3'	ІмНрРуНрРуРу-ү-НрНрРуНрРуРу
10	2103) 5'-W G T A T A G W-3'	ІтНрРуНрРуІт-ү-РуНрРуНрРуРу
	2104) 5'-W G T A T A C W-3'	ІмНрРуНрРуРу-ү-ІмНрРуНрРуРу
	2105) 5'-W G T A T G T W-3'	ІмНрРуНрІмНр-ү-РуРуРуНрРуРу
	2106) 5'-W G T A T G A W-3'	ІтнрРунрІтРу-ү-нрРуРунрРуРу
	2107) 5'-W G T A T G G W-3'	ImHpРуНpImIm-ү-РуРуРуНpРуРу
15	2108) 5'-W G T A T G C W-3'	ІтнрРунрІтРу-ү-ІтРуРунрРуРу
	2109) 5'-W G T A T C T W-3'	ІтнрРунрРунр-ү-РуІтРунрРуРу
	2110) 5'-W G T A T C A W-3'	ІтнрРунрРуРу-ү-нрІтРунрРуРу
	2111) 5'-W G T A T C G W-3'	ІтнрРунрРуІт-ү-РуІтРунрРуРу
	2112) 5'-W G T A T C C W-3'	ІтНрРуНрРуРу-ү-ІтІтРуНрРуРу
20	2113) 5'-W G T A A T T W-3'	ІшНрРуРуНрНр-ү-РуРуНрНрРуРу
	2114) 5'-W G T A A T A W-3'	ІтнрРуРуНрРу-ү-НрРуНрНрРуРу
	2115) 5'-W G T A A T G W-3'	ImHpPyPyHpIm-γ-РуРуНр H pPy Py
	2116) 5'-W G T A A T C W-3'	ІтнрРуРуНрРу-ү-ІтРуНрНрРуРу
	2117) 5'-W G T A A A T W-3'	ІтнрРуРуРуНр-ү-РуНрНрНрРуРу
25	2118) 5'-W G T A A A A W-3'	ІтнрРуРуРуРу-ү-НрНрНрРуРу
	2119) 5'-W G T A A A G W-3'	ImHpРуРуРуІm-γ-РуНрНрРуРу
	2120) 5'-W G T A A A C W-3'	ІтнрРуРуРуРу-ү-ІтнрнрнрРуРу
	2121) 5'-W G T A A G T W-3'	ІтнрРуРуІтнр-ү-РуРунрнрРуРу
	2122) 5'-W G T A A G A W-3'	ІтнрРуРуІтРу-ү-НрРунрНрРуРу
30	2123) 5'-W G T A A G G W-3'	ІтНрРуРуІтІт-ү-РуРуНрНрРуРу
	2124) 5'-W G T A A G C W-3'	${\tt ImHpPyPyImPy-\gamma-ImPyHpHpPyPy}$
	2125) 5'-W G T A A C T W-3'	ІтнрРуРуРуНр-ү-РуІтнрНрРуРу
	2126) 5'-W G T A A C A W-3'	ІтнрРуРуРуРу-ү-нрІтнрНрРуРу
	2127) 5'-W G T A A C G W-3'	ІтнрРуРуРуІт-ү-РуІтнрНрРуРу
35	2128) 5'-W G T A A C C W-3'	ІтнрРуРуРуРу-ү-ІтІтнрНрРуРу

	TABLE 113: 12-ring Hairpin Polyamides for	recognition of 8-bp 5'-WGTASNNW-3'
:	DNA sequence	aromatic amino acid sequence
	2129) 5'-W G T A G T T W-3'	ІмНрРуІмНрНр-ү-РуРуРуНрРуРу
5	2130) 5"-W G T A G T A W-3'	ІтНрРуІтНрРу-ү-НрРуРуНрРуРу
	2131) 5'-W G T A G T G W-3'	${\tt ImHpPyImHpIm-\gamma-PyPyPyHpPyPy}$
	2132) 5'-W G T A G T C W-3'	ІмНрРуІмНрРу-ү-ІмРуРуНрРуРу
	2133) 5'-W G T A G A T W-3'	${\tt ImHpPyImPyHp-\gamma-PyHpPyHpPyPy}$
	2134) 5'-W G T A G A A W-3'	${\tt ImHpPyImPyPy-\gamma-HpHpPyHpPyPy}$
10	2135) 5'-W G T A G A G W-3'	${\tt ImHpPyImPyIm-\gamma-PyHpPyHpPyPy}$
	2136) 5'-W G T A G A C W-3'	${\tt ImHpPyImPyPy-\gamma-ImHpPyHpPyPy}$
	2137) 5'-W G T A G G T W-3'	${\tt ImHpPyImImHp-\gamma-PyPyPyHpPyPy}$
	2138) 5'-W G T A G G A W-3'	${\tt ImHpPyImImPy-}\gamma{\tt -HpPyPyHpPyPy}$
	2139) 5'-W G T A G C T W-3'	${\tt ImHpPyImPyHp-\gamma-PyImPyHpPyPy}$
15	2140) 5'-W G T A G C A W-3'	${\tt ImHpPyImPyPy-\gamma-HpImPyHpPyPy}$
	2141) 5'-W G T A G G G W-3'	${\tt ImHpPyImImIm-\gamma-PyPyPyHpPyPy}$
	2142) 5'-W G T A G G C W-3'	${\tt ImHpPyImImPy-\gamma-ImPyPyHpPyPy}$
	2143) 5'-W G T A G C G W-3'	ImHpPyImPyIm-y-PyImPyHpPyPy
	2144) 5'-W G T A G C C W-3'	ImHpPyImPyPy-γ-ImImPyHpPyPy
20	2145) 5'-W G T A C T T W-3'	ІмНрРуРуНрНр-ү-РуРуІмНрРуРу
	2146) 5'-W G T A C T A W-3'	ІтнрРуРуНрРу-ү-НрРуІтнрРуРу
	2147) 5'-W G T A C T G W-3'	ІшНрРуРуНрІш-ү-РуРуІшНрРуРу
	2148) 5'-W G T A C T C W-3'	${\tt ImHpPyPyHpPy-\gamma-ImPyImHpPyPy}$
	2149) 5'-W G T A C A T W-3'	ІтнрРуРуРуНр-ү-РуНрІтнрРуРу
25	2150) 5'-W G T A C A A W-3'	ІтнрРуРуРуРу-ү-нрнрІтнрРуРу
	2151) 5'-W G T A C A G W-3'	ImHpРуРуРуIm-γ-РуНрІmНpРуРу
	2152) 5'-W G T A C A C W-3'	ImHpPyPyPyPy-y-ImHpImHpPyPy
	2153) 5'-W G T A C G T W-3'	ImHpPyPyImHp-y-PyPyImHpPyPy
	2154) 5'-W G T A C G A W-3'	ImHpPyPyImPy-7-HpPyImHpPyPy
30	2155) 5'-W G T A C C T W-3'	ImHpPyPyPyHp-y-PyImImHpPyPy
	2156) 5'-W G T A C C A W-3'	ImHpPyPyPyPy-y-HpImImHpPyPy
	2157) 5'-W G T A C G G W-3'	ImHpPyPyImIm-y-PyPyImHpPyPy
	2158) 5'-W G T A C G C W-3'	ImHpPyPyImPy-7-ImPyImHpPyPy
	2159) 5'-W G T A C C G W-3'	ІтНрРуРуРуІт-ү-РуІтІтНрРуРу
35	2160) 5'-W G T A C C C W-3'	ІтнрРуРуРуРу-ү-ІтітітнрРуРу

	TAB	3LE 114	l: 12-ri	ng I	lairpi	n Polyamides for re	ecognition of 8-bp 5'-WGTCWNNW-3'
		DNA sec					aromatic amino acid sequence
	2161) 5	′-W G	тс	T	T 7	C W-3'	ІтНрРуНрНр-ү-РуРуРуІтРуРу
5	2162) 5	′-₩ G	TC	T	T A	W-3'	ІмНрРуНрНрРу-ү-НрРуРуІмРуРу
	2163) 5	′-W G	TC	T	T (8 W-3'	ImHpРуНpНpIm-γ-РуРуРуImРуРу
	2164) 5	'-W G	; T C	T	T (C W-3'	ImHpРуНpНpРy-ү-ImРуРуImРуРу
	2165) 5	′-W G	TO	T	A :	W-3'	ІтНрРуНрРуНр-ү-РуНрРуІтРуРу
	2166) 5	′-W G	T C	T	A A	W-3'	ІтНрРуНрРуРу-ү-НрНрРуІтРуРу
10	2167) 5	′-W G	TC	T	A (W-3'	ImHpPyHpPyIm-γ-РуHpPyImPyPy
	2168) 5	′-W G	T C	T	A (C W-3'	ІтНрРуНрРуРу-ү-ІтНрРуІтРуРу
	2169) 5	′-W G	T C	T	G :	" W-3'	ImHpРуНрImHp-ү-РуРуРуІmРуРу
	2170) 5	′-W G	T C	T	G Z	W-3'	ImHpРyHpImРy-ү-HpРyРyImРyРy
	2171) 5	′-W G	TC	T	G	W-3'	ImHpPyHpImIm-y-PyPyPyImPyPy
15	2172) 5	′-W G	тс	T	G (C W-3'	ImHpРyHpImPy-ү-ImРуРуImРуРу
	2173) 5	′-W G	TC	T	C:	r W-3'	ImHpРуНpРуНp-ү-РуImРуImРуРу
	2174) 5	′-W G	3 T C	T	C Z	4 W-3'	ImHpРуНpРуРу-ү-НpImРуImРуРу
	2175) 5	'-W G	3 T C	T	C	G W-3'	ImHpPyHpPyIm-y-PyImPyImPyPy
	2176) 5	'-W G	зт с	T	C	C W-3'	ImHpPyHpPyPy-y-ImImPyImPyPy
20	2177) 5	'-W G	TC	. A	T :	r W-3'	ІмНрРуРуНрНр-ү-РуРуНрІmРуРу
	2178) 5	'-W G	тс	. A	T Z	4 M-3'	ImHpРyРyНpРy-ү-НpРyНpImРyРy
	2179) 5	'-W G	TC	! A	T (¥-3'	ImHpPyPyHpIm-y-PyPyHpImPyPy
	2180) 5	'-W G	3 T C	: A	T (C W-3'	ІтНрРуРуНрРу-ү-ІтРуНрІтРуРу
	2181) 5	'-W G	T	. A	A :	r W-3'	ІшНрРуРуРуНр-ү-РуНрНрІшРуРу
25	2182) 5	'-W G	T	: A	A	W-3'	ImHpРуРуРуРу-ү-НpНpНpImРуРу
	2183) 5	'-W G	T	: A	A (3 W-3'	ІmHpРyРyРyІm-γ-РуНpНpІmРyРy
	2184) 5	'-W G	T	: A	A	C W-3'	ImHpPyPyPyPy-y-ImHpHpImPyPy
	2185) 5	'-W G	T	: A	G :	r W-3'	ІшНрРуРуІшНр-ү-РуРуНрІшРуРу
	2186) 5	'-W G	T	: A	G 2	A W-3'	ImHpРyРyImРy-ү-НpРyНpImРyРy
30	2187) 5	'-W G	3 T (: A	G	3 W-3'	ImHpPyPyImIm-y-PyPyHpImPyPy
	2188) 5	'-W G	3 T (: A	G	C W-3'	ImHpPyPyImPy-y-ImPyHpImPyPy
	2189) 5	'-W G	3 T (A	C '	r W-3'	ІшНрРуРуРуНр-ү-РуІшНрІшРуРу
	2190) 5	'-W G	3 T (A	C :	A W-3'	ІмНрРуРуРуРу-ү-НрІмНрІмРуРу
	2191) 5	'-W G	3 T (A	C	G W-3'	ImHpPyPyPyIm-y-PyImHpImPyPy
35	2192) 5	'-W C	3 T (. A	C	C.W-3'	ІмНрРуРуРуРу-ү-ІмІмНрІмРуРу

	TABLE 115: 12-ring Hairpin Polyamides for	or recognition of 8-bp 5'-WGTCSNNW-3'
	DNA sequence	aromatic amino acid sequence
	2193) 5'-W G T C G T T W-3'	${\tt ImHpPyImHpHp-\gamma-PyPyPyImPyPy}$
5	2194) 5'-W G T C G T A W-3'	${\tt ImHpPyImHpPy-\gamma-HpPyPyImPyPy}$
	2195) 5'-W G T C G T G W-3'	${\tt ImHpPyImHpIm-\gamma-PyPyPyImPyPy}$
	2196) 5'-W G T C G T C W-3'	ImHpPyImHpPy-y-ImPyPyImPyPy
	2197) 5'-W G T C G A T W-3'	ІтНРРуІтРуНр-ү-РуНрРуІтРуРу
	2198) 5'-W G T C G A A W-3'	${\tt ImHpPyImPyPy-\gamma-HpHpPyImPyPy}$
10	2199) 5'-W G T C G A G W-3'	${\tt ImHpPyImPyIm-\gamma-PyHpPyImPyPy}$
	2200) 5'-W G T C G A C W-3'	ImHpPyImPyPy-7-ImHpPyImPyPy
	2201) 5'-W G T C G G T W-3'	ImHpPyImImHp-7-PyPyPyImPyPy
	2202) 5'-W G T C G G A W-3'	${\tt ImHpPyImImPy-}\gamma{\tt -HpPyPyImPyPy}$
	2203) 5'-W G T C G C T W-3'	ImHpPyImPyHp-y-PyImPyImPyPy
15	2204) 5'-W G T C G C A W-3'	ImHpPyImPyPy-7-HpImPyImPyPy
	2205) 5'-W G T C C T T W-3'	ImHpPyPyHpHp-y-PyPyImImPyPy
	2206) 5'-W G T C C T A W-3'	${\tt ImHpPyPyHpPy-\gamma-HpPyImImPyPy}$
	2207) 5'-W G T C C T G W-3'	ImHpPyPyHpIm-y-PyPyImImPyPy
	2208) 5'-W G T C C T C W-3'	ImHpPyPyHpPy-y-ImPyImImPyPy
20	2209) 5'-W G T C C A T W-3'	${\tt ImHpPyPyPyHp-\gamma-PyHpImImPyPy}$
	2210) 5'-W G T C C A A W-3'	${\tt ImHpPyPyPyPy-\gamma-HpHpImImPyPy}$
	2211) 5'-W G T C C A G W-3'	ImHpPyPyPyIm-y-PyHpImImPyPy
	2212) 5'-W G T C C A C W-3'	ImHpPyPyPyPy-y-ImHpImImPyPy
	2213) 5'-W G T C C G T W-3'	ImHpPyPyImHp-y-PyPyImImPyPy
25	2214) 5'-W G T C C G A W-3'	ImHpPyPyImPy-y-HpPyImImPyPy
	2215) 5'-W G T C C C T W-3'	· ImHpPyPyPyHp-γ-PyImImImPyPy
	2216) 5'-W G T C C C A W-3'	ImHpPyPyPyPy-7-HpImImImPyPy
	2217) 5'-W G T C G G G W-3'	${\tt ImHpPyImImIm-\gamma-PyPyPyImPyPy}$
	2218) 5'-W G T C G G C W-3'	ImHpPyImImPy-7-ImPyPyImPyPy
30	2219) 5'-W G T C G C G W-3'	ImHpPyImPyIm-y-PyImPyImPyPy
	2220) 5'-W G T C G C C W-3'	ImHpPyImPyPy-y-ImImPyImPyPy
	2221) 5'-W G T C C G G W-3'	ImHpPyPyImIm-γ-PyPyImImPyPy
	2222) 5'-W G T C C G C W-3'	ImHpPyPyImPy-y-ImPyImImPyPy
	2223) 5'-W G T C C C G W-3'	ImHpPyPyPyIm-y-PyImImImPyPy
35	2224) 5'-W G T C C C C W-3'	ImHpPyPyPyPy-7-ImImImImPyPy

	TABLE 116: 12-ring Hairpin Polyamides f	for recognition of 8-bp 5'WCGGWNNW-3'
	DNA sequence	aromatic amino acid sequence
	2225) 5'W C G G T T T W-3'	РуІмІмНрНрНр-ү-РуРуРуРуРуІм
	2226) 5'W C G G T T A W-3'	РуІмІмНрНрРу-у-НрРуРуРуРуІм
5	2227) 5'W C G G T T G W-3'	РуІмІмНрНрІм-ү-РуРуРуРуРуІм
	2228) 5'W C G G T T C W-3'	РуІмІмНрНрРу-ү-ІмРуРуРуРуІм
	2229) 5'W C G G T A T W-3'	РуІмІмНрРуНр-ү-РуНрРуРуРуІм
	2230) 5'W C G G T A A W-3'	РуІмІмНрРуРу-ү-НрНрРуРуРуІм
	2231) 5'W C G G T A G W-3'	РуІмІмНрРуІм-ү-РуНрРуРуРуІм
10	2232) 5'W C G G T A C W-3'	РуІмІмНрРуРу-ү-ІмНрРуРуРуІм
	2233) 5'W C G G T G T W-3'	РуІмІмНрІмНр-ү-РуРуРуРуРуІм
	2234) 5'W C G G T G A W-3'	PyImImHpImPy-y-HpPyPyPyPyIm
	2235) 5'W C G G T G G W-3'	PyImImHpImIm-y-PyPyPyPyPyIm
	2236) 5'W C G G T G C W-3'	PyImImHpImPy-y-ImPyPyPyPyIm
15	2237) 5'W C G G T C T W-3'	РуІмІмНрРуНр-ү-РуІмРуРуРуІм
	2238) 5'W C G G T C A W-3'	PyImImHpPyPy-7-HpImPyPyPyIm
	2239) 5'W C G G T C G W-3'	PyImImHpPyIm-y-PyImPyPyPyIm
	2240) 5'W C G G T C C W-3'	PyImImHpPyPy-y-ImImPyPyPyIm
	2241) 5'W C G G A T T W-3'	РуІмІмРуНрНр-ү-РуРуНрРуРуІм
20	2242) 5'W C G G A T A W-3'	РуІтІтРуНрРу-ү-НрРуНрРуРуІт
	2243) 5'W C G G A T G W-3'	PyImImPyHpIm-y-PyPyHpPyPyIm
	2244) 5'W C G G A T C W-3'	PyImImPyHpPy-y-ImPyHpPyPyIm
	2245) 5'W C G G A A T W-3'	${ t PyImImPyPyHp-\gamma-PyHpHpPyPyIm}$
	2246) 5'W C G G A A A W-3'	PyImImPyPyPy-7-HpHpHpPyPyIm
25	2247) 5'W C G G A A G W-3'	PyImImPyPyIm-7-PyHpHpPyPyIm
	2248) 5'W C G G A A C W-3'	PyImImPyPyPy-y-ImHpHpPyPyIm
	2249) 5'W C G G A G T W-3'	PyImImPyImHp-7-PyPyHpPyPyIm
	2250) 5'W C G G A G A W-3'	PyImImPyImPy-7-HpPyHpPyPyIm
	2251) 5'W C G G A G G W-3'	PyImImPyImIm-y-PyPyHpPyPyIm
30	2252) 5'W C G G A G C W-3'	PyImImPyImPy-y-ImPyHpPyPyIm
	2253) 5'W C G G A C T W-3'	PyImImPyPyHp-y-PyImHpPyPyIm
	2254) 5'W C G G A C A W-3'	PyImImPyPyPy-γ-HpImHpPyPyIm
	2255) 5'W C G G A C G W-3'	PyImImPyPyIm-γ-PyImHpPyPyIm
	2256) 5'W C G G A C C W-3'	PyImImPyPyPy-γ-ImImHpPyPyIm

	TABLE 117: 12-ring Hairpin Polyamides for recognition of 8-bp 5'WCGGSNNW-3'					
	DNA sequence		aromatic amino acid sequence			
	2257) 5'W C G G G T	T W-3'	PyImImImHpHp-y-PyPyPyPyPyIm			
5	2258) 5'W C G G G T	A W-3'	PyImImImHpPy-y-HpPyPyPyPyIm			
	2259) 5'W C G G G T	G W-3'	PyImImImHpIm-y-PyPyPyPyPyIm			
	2260) 5'W C G G G T	C W-3'	PyImImImHpPy-y-ImPyPyPyPyIm			
	2261) 5'W C G G G A	T W-3'	PyImImImPyHp-y-PyHpPyPyPyIm			
	2262) 5'W C G G G A	A W-3'	PyImImImPyPy-y-HpHpPyPyPyIm			
10	2263) 5'W C G G G A	G W-3'	PyImImImPyIm-y-PyHpPyPyPyIm			
	2264) 5'W C G G G A	C W-3'	PyImImImPyPy-y-ImHpPyPyPyIm			
	2265) 5'W C G G G G	T W-3'	PyImImImHp-y-PyPyPyPyPyIm			
	2266) 5'W C G G G G	A W-3'	PyImImImPy-7-HpPyPyPyPyIm			
	2267) 5'W C G G G C	T W-3 '	PyImImImPyHp-7-PyImPyPyPyIm			
15	2268) 5'W C G G G C	A W-3'	PyImImImPyPy-y-HpImPyPyPyIm			
	2269) 5'W C G G C T	T W-3'	PyImImPyHpHp-y-PyPyImPyPyIm			
	2270) 5'W C G G C T	A W-3'	PyImImPyHpPy-7-HpPyImPyPyIm			
	2271) 5'W C G G C T	G W-3'	PyImImPyHpIm-7-PyPyImPyPyIm			
	2272) 5'W C G G C T	C M-3,	PyImImPyHpPy-7-ImPyImPyPyIm			
20.	2273) 5'W C G G C A	T W-3'	PyImImPyPyHp-7-PyHpImPyPyIm			
	2274) 5'W C G G C A	A W-3'	PyImImPyPyPy-y-HpHpImPyPyIm			
	2275) 5'W C G G C A	G W-3'	PyImImPyPyIm-y-PyHpImPyPyIm			
	2276) 5'W C G G C A	C M-3'	PyImImPyPyPy-y-ImHpImPyPyIm			
	2277) 5'W C G G C G	T W-3'	PyImImPyImHp-y-PyPyImPyPyIm			
25	2278) 5'W C G G C G	A W-3'	PyImImPyImPy-y-HpPyImPyPyIm			
	2279) 5'W C G G C C	T W-3'	PylmImPyPyHp-γ-PylmImPyPy1m			
	2280) 5'W C G G C C	A W-3'	PyImImPyPyPy-7-HpImImPyPyIm			
	G83) 5'W C G G G G	G W-3'	PyImImImIm-y-PyPyPyPyPyIm			
	G84) 5'W C G G G G	C W-3'	PyImImImImPy-γ-ImPyPyPyPyIm			
30	G85) 5'W C G G G C	G W-3'	PyImImImPyIm-γ-PyImPyPyPyIm			
	G86) 5'W C G G G C	C M-3	PyImImImPyPy-γ-ImImPyPyPyIm			
	G87) 5'W C G G C G		PyImImPyImIm-y-PyPyImPyPyIm			
	G88) 5'W C G G C G		PyImImPyImPy-7-ImPyImPyPyIm			
	G89) 5'W C G G C C		PyImImPyPyIm-y-PyImImPyPyIm			
35	G90) 5'W C G G C C	C M-3.	PyImImPyPyPy-y-ImImImPyPyIm			

	TA	ABLE 118: 12-ring Hairpin Polyamides f	for recognition of 8-bp 5'-WCGTWNNW-3'
_	· · · · · · · · · · · · · · · · · · ·	DNA sequence	aromatic amino acid sequence
	2281)	5'W C G T T T T W-3'	PyImHpHpHpHp-y-PyPyPyPyPyIm
	2282)	5'W C G T T T A W-3'	РуІтНрНрНрРу-ү-НрРуРуРуРуІт
	2283)	5'W C G T T T G W-3'	РуІтНрнрнріт-ү-РуРуРуРуРуІт
	2284)	5'W C G T T T C W-3'	РуІmHpHpHpPy-ү-ImPyPyPyPyIm
	2285)	5'W C G T T A T W-3'	РуІтНрНрРуНр-ү-РуНрРуРуРуІт
	2286)	5'W C G T T A A W-3'	РуІтнрнрРуРу-ү-НрнрРуРуРуІт
	2287)	5'W C G T T A G W-3'	РуІтНрНрРуІт-ү-РуНрРуРуРуІт
	2288)	5'W C G T T A C W-3'	РуІmНpНpРуРу-ү-ІmНpРуРуРуIm
	2289)	5'W C G T T G T W-3'	РуІтНрНрІтНр-ү-РуРуРуРуРуІт
	2290)	5'W C G T T G A W-3'	РуІmНpНpІmРy-ү-НpРyРyРyРyIm
	2291)	5'W C G T T G G W-3'	РуІтНрНрІтІт-ү-РуРуРуРуРуІт
	2292)	5'W C G T T G C W-3'	РуІтНрНрІтРу-ү-ІтРуРуРуРуІт
	2293)	5'W C G T T C T W-3'	РуІтНрНрРуНр-ү-РуІтРуРуРуІт
	2294)	5'W C G T T C A W-3'	РуІmНpНpРуРу-ү-НpІmРуРуРуІm
	2295)	5'W C G T T C G W-3'	РуІтНрНрРуІт-ү-РуІтРуРуРуІт
	2296)	5'W C G T T C C W-3'	РуІтНрНрРуРу-ү-ІтІтРуРуРуІт
	2297)	5'W C G T A T T W-3'	РуІтНрРуНрНр-ү-РуРуНрРуРуІт
	2298)	5'W C G T A T A W-3'	РуІmНpРуHpРy-ү-HpРуHpРуPyIm
	2299)	5'W C G T A T G W-3'	РуІтНрРуНрІт-ү-РуРуНрРуРуІт
	2300)	5'W C G T A T C W-3'	РуІтНрРуНрРу-ү-ІтРуНрРуРуІт
	2301)	5'W C G T A A T W-3'	РуІмНрРуРуНр-ү-РуНрНрРуРуІм
	2302)	5'W C G T A A A W-3'	РуІтНрРуРуРу-ү-НрНрНрРуРуІт
	2303)	5'W C G T A A G W-3'	РуІ m HpРуРуІm-ү-РуНpНpРуРуІm
	2304)	5'W C G T A A C W-3'	РуІтНрРуРуРу-ү-ІтНрНрРуРуІт
	2305)	5'W C G T A G T W-3'	РуІтНрРуІтНр-ү-РуРуНрРуРуІт
	2306)	5'W C G T A G A W-3'	РуІтНрРуІтРу-ү-НрРуНрРуРуІт
	2307)	5'W C G T A G G W-3'	PyImHpPyImIm-y-PyPyHpPyPyIm
	2308)	5'W C G T A G C W-3'	РуІmHpРуImРу-ү-ImРуHpРуРуIm
	2309)	5'W C G T A C T W-3'	PyImHpPyPyHp-y-PyImHpPyPyIm
	2310)	5'W C G T A C A W-3'	PyImHpPyPyPy-y-HpImHpPyPyIm
	2311)	5'W C G T A C G W-3'	PyImHpPyPyIm-γ-PyImHpPyPyIm
	2312)	5'W C G T A C C.W-3'	PyImHpPyPyPy-y-ImImHpPyPyIm

	TABLE 119: 12-ring Hairpin Polyamides for	recognition of 8-bp 5'-WCGTSNNW-3'
	DNA sequence	aromatic amino acid sequence
	2313) 5'W C G T G T T W-3'	РуІтНрІтНрНр-ү-РуРуРуРуРуІт
5	2314) 5'W C G T G T A W-3'	PyImHpImHpPy-y-HpPyPyPyPyIm
	2315) 5'W C G T G T G W-3'	PyImHpImHpIm-y-PyPyPyPyPyIm
	2316) 5'W C G T G T C W-3'	PyImHpImHpPy-y-ImPyPyPyPyIm
	2317) 5'W C G T G A T W-3'	РуІтНрІтРунр-ү-РунрРуРуРуІт
	2318) 5'W C G T G A A W-3'	PyImHpImPyPy-y-HpHpPyPyPyIm
10	2319) 5'W C G T G A G W-3'	PyImHpImPyIm-y-PyHpPyPyPyIm
	2320) 5'W C G T G A C W-3'	PyImHpImPyPy-y-ImHpPyPyPyIm
	2321) 5'W C G T G G T W-3'	${\tt PyImHpImImHp-\gamma-PyPyPyPyPyIm}$
	2322) 5'W C G T G G A W-3'	PyImHpImImPy-7-HpPyPyPyPyIm
	2323) 5'W C G T G C T W-3'	PyImHpImPyHp-y-PyImPyPyPyIm
15	2324) 5'W C G T G C A W-3'	PyImHpImPyPy-7-HpImPyPyPyIm
	2325) 5'W C G T G G G W-3'	PyImHpImImIm-y-PyPyPyPyPyIm
	2326) 5'W C G T G G C W-3'	PyImHpImImPy-7-ImPyPyPyPyIm
	2327) 5'W C G T G C G W-3'	PyImHpImPyIm-y-PyImPyPyPyIm
	2328) 5'W C G T G C C W-3'	PyImHpImPyPy-y-ImImPyPyPyIm
20	2329) 5'W C G T C T T W-3'	РуІтНРРуНрНр-ү-РуРуІтРУРУІт
	2330) 5'W C G T C T A W-3'	РуІтНРРУНРРУ-ү-НРРУІтРУРУІт
	2331) 5'W C G T C T G W-3'	PyImHpPyHpIm-y-PyPyImPyPyIm
	2332) 5'W C G T C T C W-3'	PyImHpPyHpPy-y-ImPyImPyPyIm
	2333) 5'W C G T C A T W-3'	РуІмНрРуРуНр-ү-РуНрІмРуРуІм
25	2334) 5'W C G T C A A W-3'	PyImHpPyPyPy-γ-HpHpImPyPyIm
	2335) 5'W C G T C A G W-3'	PyImHpPyPyIm-γ-PyHpImPyPyIm
	2336) 5'W C G T C A C W-3'	PyImHpPyPyPy-7-ImHpImPyPyIm
	2337) 5'W C G T C G T W-3'	РуІтНрРуІтНр-ү-РуРуІтРуРуІт
	2338) 5'W C G T C G A W-3'	PyImHpPyImPy-γ-HpPyImPyPyIm
30	2339) 5'W C G T C C T W-3'	PyImHpPyPyHp-γ-PyImImPyPyIm
	2340) 5'W C G T C C A W-3'	PyImHpPyPyPy-y-HpImImPyPyIm
	2341) 5'W C G T C G G W-3'	PyImHpPyImIm-y-PyPyImPyPyIm
	2342) 5'W C G T C G C W-3'	PyImHpPyImPy-y-ImPyImPyPyIm
	2343) 5'W C G T C C G W-3'	PyImHpPyPyIm-y-PyImImPyPyIm
35	2344) 5'W C G T C C C W-3'	PyImHpPyPyPy-y-ImImImPyPyIm

		or recognition of 8-bp 5'-WCGAWNNW-3'
	DNA sequence	aromatic amino acid sequence
	2345) 5'W C G A T T T W-3'	РуІтРунрнрнр-ү-РуРуРунрРуІт
5	2346) 5'W C G A T T A W-3'	РуІмРуНрНрРу-ү-НрРуРуНрРуІм
	2347) 5'W C G A T T G W-3'	PyImPyHpHpIm-y-PyPyPyHpPyIm
	2348) 5'W C G A T T C W-3'	РуІmРуНрНpРy-ү-ІmРуРуНpРyIm
	2349) 5'W C G A T A T W-3'	РуІмРуНрРуНр-ү-РуНрРуНрРуІм
	2350) 5'W C G A T A A W-3'	РуІмРуНрРуРу-ү-НрНрРуНрРуІм
10	2351) 5'W C G A T A G W-3'	РуІмРуНрРуІм-ү-РуНрРуНрРуІм
	2352) 5'W C G A T A C W-3'	РуІmРуHpРуРу-ү-ІmНpРуHpРуIm
	2353) 5'W C G A T G T W-3'	PyImPyHpImHp-7-PyPyPyHpPyIm
	2354) 5'W C G A T G A W-3'	${ t PyImPyHpImPy-\gamma-HpPyPyHpPyIm}$
	2355) 5'W C G A T G G W-3'	PyImPyHpImIm-7-PyPyPyHpPyIm
15	2356) 5'W C G A T G C W-3'	PyImPyHpImPy-7-ImPyPyHpPyIm
	2357) 5'W C G A T C T W-3'	$PyImPyHpPyHp-\gamma-PyImPyHpPyIm$
	2358) 5'W C G A T C A W-3'	PyImPyHpPyPy-7-HpImPyHpPyIm
	2359) 5'W C G A T C G W-3'	PyImPyHpPyIm-y-PyImPyHpPyIm
	2360) 5'W C G A T C C W-3'	PyImPyHpPyPy-7-ImImPyHpPyIm
20	2361) 5'W C G A A T T W-3'	$PyImPyPyHpHp-\gamma-PyPyHpHpPyIm$
	2362) 5'W C G A A T A W-3'	${ t PyImPyPyHpPy-\gamma-HpPyHpHpPyIm}$
	2363) 5'W C G A A T G W-3'	$PyImPyPyHpIm-\gamma-PyPyHpHpPyIm$
	2364) 5'W C G A A T C W-3'	РуІтРуРуНрРу-ү-ІтРуНрНрРуІт
	2365) 5'W C G A A A T W-3'	РуІтРуРуРуНр-ү-РуНрНрНрРуІт
25	2366) 5'W C G A A A A W-3'	РуІмРуРуРуРу-ү-НрНрНрНрРуІм
	2367) 5'W C G A A A G W-3'	PyImPyPyPyIm-y-PyHpHpHpPyIm
	2368) 5'W C G A A A C W-3'	РуІтРуРуРуРу-ү-ІтНрНрНрРуІт
	2369) 5'W C G A A G T W-3'	PyImPyPyImHp-y-PyPyHpHpPyIm
	2370) 5'W C G A A G A W-3'	PyImPyPyImPy-7-HpPyHpHpPyIm
30	2371) 5'W C G A A G G W-3'	PyImPyPyImIm-y-PyPyHpHpPyIm
	2372) 5'W C G A A G C W-3'	PyImPyPyImPy-7-ImPyHpHpPyIm
	2373) 5'W C G A A C T W-3'	PyImPyPyPyHp-y-PyImHpHpPyIm
	2374) 5'W C G A A C A W-3'	PyImPyPyPyPy-γ-HpImHpHpPyIm
	2375) 5'W C G A A C G W-3'	PyImPyPyPyIm-γ-PyImHpHpPyIm
35	2376) 5'W C G A A C C W-3'	PyImPyPyPyPy-γ-ImImHpHpPyIm

DNA sequence aromatic amino acid sequence 2377) 5'W C G A G T T W-3' PyImPyImPth-Py-PyPPyPyPyIm 2378) 5'W C G A G T A W-3' PyImPyImPth-Py-PyPPyPyPyIm 2379) 5'W C G A G T G W-3' PyImPyImPth-Py-PyPPyPyPyIm 2380) 5'W C G A G T C W-3' PyImPyImPth-Py-PyPPyPyPyPyIm 2381) 5'W C G A G A C W-3' PyImPyImPth-Py-PyPPyPyPyPyIm 2382) 5'W C G A G A A W-3' PyImPyImPyIm-Py-PyPPyPyPyIm 2383) 5'W C G A G A A W-3' PyImPyImPyIm-Py-PyPPyPyPyIm 2384) 5'W C G A G A C W-3' PyImPyImPyPy-Py-PyPPyPyPyIm 2385) 5'W C G A G A C W-3' PyImPyImPy-Py-PyPPyPyPyIm 2386) 5'W C G A G G A W-3' PyImPyImPy-Py-PyPPyPyPyIm 2386) 5'W C G A G G A W-3' PyImPyImPy-Py-PyPPPYPyIm 2386) 5'W C G A G G C T W-3' PyImPyImPy-Py-PyPPPYPyIm 2389) 5'W C G A G G G W-3' PyImPyImPy-Py-PyPPPYPyIm 2389) 5'W C G A G G G W-3' PyImPyImPy-Py-PyPPPYPyIm 2391) 5'W C G A G C C W-3' PyImPyImPy-Py-PyPPYPyIm 2392) 5'W C G A G C C W-3' PyImPyImPy-Py-PyPPYPIm 2394) 5'W C G A C T T W-3' PyImPyPPY-Py-Py-PyPPYImPyIm 2394) 5'W C G A C T T W-3' PyImPyPPY-Py-Py-PyPPImPyIm 2395) 5'W C G A C T C W-3' PyImPyPPY-Py-PyPPImPyImPyIm 2396) 5'W C G A C T C W-3' PyImPyPPY-Py-Py-PyPPImPyIm 2397) 5'W C G A C T C W-3' PyImPyPPY-Py-Py-PyPPImPyImPyIm 2399) 5'W C G A C T C W-3' PyImPyPPY-Py-Py-Py-PyPImIPPPYIm 2399) 5'W C G A C A C W-3' PyImPyPPY-Py-Py-Py-PyPImIPPPYIm 2399) 5'W C G A C A C W-3' PyImPyPPY-Py-Py-Py-Py-PyImIPPPYIm 2400) 5'W C G A C G G W-3' PyImPyPPY-Py-Py-Py-Py-PyImIPPPYIm 2401) 5'W C G A C G G W-3' PyImPyPPY-Py-Py-Py-Py-Py-Py-Py-Py-Py-Py-Py-Py-Py-		TA	BLE 121: 12-ring Hairpin Polyamides for re	ecognition of 8-bp 5'-WCGASNNW-3'
5			DNA sequence	aromatic amino acid sequence
2379) 5'W C G A G T G W-3' PyImPyImipTm-Y-PyPyPyHpPyIm 2380) 5'W C G A G T C W-3' PyImPyImipTm-Y-PyHpPyIm 2381) 5'W C G A G A T W-3' PyImPyImipTm-Y-PyHpPyHpPyIm 2382) 5'W C G A G A G W-3' PyImPyImPyPy-Y-HpHpPyHpPyIm 2383) 5'W C G A G A G W-3' PyImPyImPyPy-Y-HpHpPyHpPyIm 2385) 5'W C G A G A G W-3' PyImPyImPyPy-Y-ImPyPyHpPyIm 2386) 5'W C G A G G T W-3' PyImPyImImPy-Y-PyPyPyHpPyIm 2387) 5'W C G A G C T W-3' PyImPyImImPy-Y-PyPyPyHpPyIm 2388) 5'W C G A G C T W-3' PyImPyImImPy-Y-PyPyPyHpPyIm 2389) 5'W C G A G G G W-3' PyImPyImImPy-Y-PyPyPyHpPyIm 2399) 5'W C G A G C G W-3' PyImPyImImPy-Y-PyPyPyHpPyIm 2391) 5'W C G A G C C W-3' PyImPyImImPy-Y-PyPyPyHpPyIm 2392) 5'W C G A C T T W-3' PyImPyImPyPy-Y-ImPyHpPyIm 2393) 5'W C G A C T G W-3' PyImPyPyHpPy-Y-PyImPyHpPyIm 2394) 5'W C G A C T G W-3' PyImPyPyHpPy-Y-PyPyImPyImPyImPyImPyPyPyPyPy-Y-HpImPyImPyImPyImPyPyPyPyPy-Y-HpImPyImPyImPyImPyPyPyPyPy-Y-HpImPyImPyImPyImPyPyPyPyPy-Y-HpImPyImPyImPyImPyPyPyPyPy-Y-HpImPyImPyImPyPyPyPyPyPy-Y-HpImPyImPyImPyImPyPyPyPyPyPy-Y-HpImPyImPyImPyPyPyPyPyPy-Y-HpImImPyImPyImPyPyPyPyPyPy-Y-HpImImPyImPyImPyImPyPyPyPyPyPy-Y-HpIpImImPyImPyImPyPyPyPyPyPyIm-Y-PyPyImImPyImPyImPyPyPyPyPyPyIm-Y-PyPyImImPyImPyImPyImPyPyPyPyPyIm-Y-PyPyImImPyImPyImPyPyPyPyPyIm-Y-PyPyImImPyImPyImPyPyPyPyPyPyIm-Y-PyPyImImPyImPyImPyPyPyPyPyIm-Y-PyPyImImPyImPyImPyPyPyPyPyIm-Y-PyPyImImPyPyImPyPyPyPyPyPyIm-Y-PyPyImImPyPyImPyImPyPyPyPyPyPyIm-Y-PyPyImImPyPyImPyImPyPyPyPyPyPyIm-Y-PyPyImImPPyImPyImPyPyPyPyPyPyPyIm-Y-PyPyImImPPyImPyImPyPyPyPyPyPyIm-Y-PyPyImImPPyImPyImPyPyPyPyPyPyPyImPy-Y-HpPIImImPPyImPyImPyPyPyPyPyPyPyPyIm-Y-PyPyImImPPyImPyImPyPyPyPyPyPyIm-Y-PyPyImImPPyImPyImPyPyPyPyPyPyPyIm-Y-PyPyImImPPyImPyImPyPyPyPyImPy-Y-ImPyImImPPyImPyImPyPyPyImPy-Y-ImPyPyImPPyImPyImPyImPyPyPyImPy-Y-ImPyPyImPpPyImPyImPyPyImPyPyPyImPy-Y-PyPyImImPPyImPPImPyImPPPIPImPyPyPyPyIm-Y-PyPyImImPPPIPImPPIPImPPPIPIPPIPIPPPIPPPI		2377)	5'W C G A G T T W-3'	${\tt PyImPyImHpHp-\gamma-PyPyPyHpPyIm}$
2380) 5'W C G A G T C W-3' 2381) 5'W C G A G A T W-3' 2382) 5'W C G A G A T W-3' 2382) 5'W C G A G A T W-3' 2383) 5'W C G A G A A W-3' 2383) 5'W C G A G A G W-3' 2384) 5'W C G A G A G W-3' 2385) 5'W C G A G A G W-3' 2386) 5'W C G A G A G W-3' 2386) 5'W C G A G G T W-3' 2387) 5'W C G A G C T W-3' 2388) 5'W C G A G C T W-3' 2388) 5'W C G A G G C W-3' 2389) 5'W C G A G G C W-3' 2390) 5'W C G A G G C W-3' 2391) 5'W C G A G C C W-3' 2392) 5'W C G A G C C W-3' 2393) 5'W C G A C T T W-3' 2394) 5'W C G A C T T W-3' 2395) 5'W C G A C T T W-3' 2396) 5'W C G A C T C W-3' 2397) 5'W C G A C T C W-3' 2398) 5'W C G A C T T W-3' 2399) 5'W C G A C T C W-3' 2399) 5'W C G A C T C W-3' 2391) 5'W C G A C T C W-3' 2392) 5'W C G A C T C W-3' 2393) 5'W C G A C T C W-3' 2394) 5'W C G A C T C W-3' 2395) 5'W C G A C T C W-3' 2396) 5'W C G A C T C W-3' 2397) 5'W C G A C T C W-3' 2398) 5'W C G A C T C W-3' 2399) 5'W C G A C T C W-3' 2399) 5'W C G A C A T W-3' 2399) 5'W C G A C A T W-3' 2399) 5'W C G A C A T W-3' 2399) 5'W C G A C A T W-3' 2399) 5'W C G A C A T W-3' 2399) 5'W C G A C A T W-3' 2399) 5'W C G A C A T W-3' 2399) 5'W C G A C A T W-3' 2400) 5'W C G A C A W-3' 2401) 5'W C G A C A W-3' 2402) 5'W C G A C A W-3' 2403) 5'W C G A C A W-3' 2404) 5'W C G A C A W-3' 2406) 5'W C G A C C T W-3' 2407) 5'W C G A C C T W-3' 2408) 5'W C G A C C T W-3' 2409	5	2378)	5'W C G A G T A W-3'	РуІтРуІтНрРу-ү-НрРуРуНрРуІт
2381) 5'W C G A G A T W-3' PyImPyImPyHp-Y-PyHpPyHpPyIm 2382) 5'W C G A G A A W-3' PyImPyImPyHp-Y-PyHpPyHpPyIm 2383) 5'W C G A G A G W-3' PyImPyImPyHp-Y-PyHpPyHpPyIm 2384) 5'W C G A G A C W-3' PyImPyImPyPy-Y-ImHpPyHpPyIm 2385) 5'W C G A G G T W-3' PyImPyImPyPy-Y-ImHpPyHpPyIm 2386) 5'W C G A G G T W-3' PyImPyImPyHp-Y-PyPyPyHpPyIm 2387) 5'W C G A G C T W-3' PyImPyImPyHp-Y-PyImPyHpPyIm 2388) 5'W C G A G C A W-3' PyImPyImPyHp-Y-PyImPyHpPyIm 2389) 5'W C G A G G G W-3' PyImPyImImIm-Y-PyPyPyHpPyIm 2390) 5'W C G A G C G W-3' PyImPyImPyH-Y-PyImPyHpPyIm 2391) 5'W C G A G C C W-3' PyImPyImPyY-Y-ImPyHpPyIm 2392) 5'W C G A C T T W-3' PyImPyImPyY-Y-ImImPyHpPyIm 2393) 5'W C G A C T A W-3' PyImPyPyHpHp-Y-PyPyImHpPyIm 2394) 5'W C G A C T G W-3' PyImPyPyHpHp-Y-PyPyImHpPyIm 2395) 5'W C G A C T C W-3' PyImPyPyHpHp-Y-PyPyImHpPyIm 2396) 5'W C G A C T C W-3' PyImPyPyHpPy-Y-ImPyImPPyIm 2397) 5'W C G A C T C W-3' PyImPyPyPyHp-Y-PyHpImHpPyIm 2399) 5'W C G A C A C W A-3' PyImPyPyPyPy-Y-ImPyImHpPyIm 2399) 5'W C G A C A C W-3' PyImPyPyPyPy-Y-PyHpImHpPyIm 2400) 5'W C G A C G T W-3' PyImPyPyPyPy-Y-PyHpImHpPyIm 2401) 5'W C G A C G T W-3' PyImPyPyPyImPy-Y-PyHpImHpPyIm 2402) 5'W C G A C C T W-3' PyImPyPyPyImPy-Y-PyHpImHpPyIm 2403) 5'W C G A C C T W-3' PyImPyPyPyPy-Y-PyHpImHpPyIm 2404) 5'W C G A C C T W-3' PyImPyPyPyPy-Y-PyHpImHpPyIm 2405) 5'W C G A C C T W-3' PyImPyPyPyPy-Y-PyHpImHpPyIm 2406) 5'W C G A C C C W-3' PyImPyPyPyPy-Y-PyHpImHpPyIm 2407) 5'W C G A C C C W-3' PyImPyPyPyPy-Y-PyHpImHpPyIm 2408) 5'W C G A C C G W-3' PyImPyPyPyPy-Y-PyHpImHpPyIm 2409 5'W C G A C C C W-3' PyImPyPyPyPy-Y-PyHpImHpPyIm 2409 5'W C G A C G C W-3' PyImPyPyPyPy-Y-PyImImHpPyIm 2409 5'W C G A C G C W-3' PyImPyPyPyPy-Y-PyImImHpPyIm 2409 5'W C G A C G C W-3' PyImPyPyPyPy-Y-PyImImHpPyIm 2409 5'W C G A C G C W-3' PyImPyPyPyIm-Y-PyImImHpPyIm 2409 5'W C G A C G C W-3' PyImPyPyPyPy-Y-PyImImHpPyIm 2409 5'W C G A C G C W-3' PyImPyPyPyIm-Y-PyImImHpPyIm 2409 5'W C G A C G C W-3' PyImPyPyPyIm-Y-PyImImHpPyIm		2379)	5'W C G A G T G W-3'	PyImPyImHpIm-y-PyPyPyHpPyIm
2382) 5'W C G A G A A W-3' PyImPyImPyPy-y-HpHpPyHpPyIm 2383) 5'W C G A G A G W-3' PyImPyImPyPy-y-HpHpPyHpPyIm 2384) 5'W C G A G A C W-3' PyImPyImPyPy-y-HpHpPyHpPyIm 2385) 5'W C G A G G T W-3' PyImPyImPyPy-y-PyHpPyHpPyIm 2386) 5'W C G A G G T W-3' PyImPyImPyPy-y-PyHpPyHpPyIm 2387) 5'W C G A G C T W-3' PyImPyImPyPy-y-PyHpPyIm 2388) 5'W C G A G C C W-3' PyImPyImPyPy-y-PyHpPyIm 2389) 5'W C G A G C C W-3' PyImPyImPyPy-y-PyHpPyIm 2390) 5'W C G A G C C W-3' PyImPyImPyPy-y-PyHpPyIm 2391) 5'W C G A C T T W-3' PyImPyImPy-y-PyHpPyIm 2392) 5'W C G A C T T W-3' PyImPyImPy-y-PyHpPyIm 2393) 5'W C G A C T C W-3' PyImPyPyPy-y-HpPyImHpPyIm 2394) 5'W C G A C T C W-3' PyImPyPyPyPy-y-HpPyImHpPyIm 2395) 5'W C G A C T C W-3' PyImPyPyPyPy-y-HpPyImHpPyIm 2396) 5'W C G A C A C T G W-3' PyImPyPyPyPy-y-PyHpImPpPyIm 2397) 5'W C G A C A C T G W-3' PyImPyPyPyPy-y-PyHpImPpPyIm 2398) 5'W C G A C A C W-3' PyImPyPyPyPy-y-PyHpImPpPyIm 2399) 5'W C G A C A C W-3' PyImPyPyPyPy-y-PyHpImPpPyIm 2400) 5'W C G A C A C W-3' PyImPyPyPyPy-y-PyHpImHpPyIm 2401) 5'W C G A C G C W-3' PyImPyPyPyPy-y-PyHpImHpPyIm 2402) 5'W C G A C G A W-3' PyImPyPyPyPy-y-PyHpImHpPyIm 2403) 5'W C G A C C T W-3' PyImPyPyPyPy-y-PyPyImHpPyIm 2404) 5'W C G A C C T W-3' PyImPyPyPyPy-y-PyPyImHpPyIm 2405) 5'W C G A C C C W-3' PyImPyPyPyPy-y-PyPyImImPPyIm 2406) 5'W C G A C C C W-3' PyImPyPyPyPy-y-PyPyImImPPyIm 2407) 5'W C G A C C C W-3' PyImPyPyPyPy-y-PyPyImImPPyIm 2408) 5'W C G A C C C W-3' PyImPyPyPyPy-y-PyPyImImPPyIm 2409) 5'W C G A C C C W-3' PyImPyPyPyPy-y-PyPyImImPPyIm 2400) 5'W C G A C C C W-3' PyImPyPyPyPy-y-PyPyImImPPyIm 2401) 5'W C G A C C C W-3' PyImPyPyPyPy-y-PyPyImImPPyIm 2406) 5'W C G A C G C W-3' PyImPyPyPyPy-y-PyPyImImPPyIm 2407) 5'W C G A C G C W-3' PyImPyPyPyImIm-y-PyPyImImPPyIm 2408) 5'W C G A C G G W-3' PyImPyPyPyImIm-y-PyPyImImPPyIm		2380)	5'W C G A G T C W-3'	PyImPyImHpPy-y-ImPyPyHpPyIm
10		2381)	5'W C G A G A T W-3'	РуІтРуІтРуНр-ү-РуНрРуНрРуІт
2384) 5'W C G A G A C W-3' PyImPyImPyPy-Y-ImHpPyHpPyIm 2385) 5'W C G A G G T W-3' PyImPyImImHp-Y-PyPyPyHpPyIm 2386) 5'W C G A G G A W-3' PyImPyImImPy-Y-PyPyPyHpPyIm 2387) 5'W C G A G C T W-3' PyImPyImImPy-Y-PyImPyHpPyIm 2388) 5'W C G A G C A W-3' PyImPyImPyHp-Y-PyImPyHpPyIm 2389) 5'W C G A G G G W-3' PyImPyImImIm-Y-PyPyPyHpPyIm 2390) 5'W C G A G G G W-3' PyImPyImImIm-Y-PyPyPyHpPyIm 2391) 5'W C G A G C G W-3' PyImPyImImPy-Y-ImPyPyPyHpPyIm 2392) 5'W C G A G C C W-3' PyImPyImPyIm-Y-PyImPyHpPyIm 2393) 5'W C G A C T T W-3' PyImPyPyHpPy-Y-ImImPyPpyIm 2394) 5'W C G A C T G W-3' PyImPyPyHpPy-Y-PyPyImHpPyIm 2395) 5'W C G A C T G W-3' PyImPyPyHpPy-Y-PyPyImHpPyIm 2396) 5'W C G A C A T W-3' PyImPyPyHpPy-Y-PyPyImHpPyIm 2397) 5'W C G A C A C W-3' PyImPyPyPyPy-Y-ImPyImPyIm 2399) 5'W C G A C A C W-3' PyImPyPyPyPy-Y-PyPyImHpPyIm 2399) 5'W C G A C A C W-3' PyImPyPyPyPy-Y-PyPyImHpPyIm 2399) 5'W C G A C A C W-3' PyImPyPyPyPy-Y-PyPyImHpPyIm 2400) 5'W C G A C A C W-3' PyImPyPyPyPy-Y-PyPyImHpPyIm 2401) 5'W C G A C A C W-3' PyImPyPyPyIm-Y-PyPyImHpPyIm 2401) 5'W C G A C G G W-3' PyImPyPyPyPy-Y-PyPyImHpPyIm 2402) 5'W C G A C C T W-3' PyImPyPyPyPy-Y-PyPyImHpPyIm 2403 5'W C G A C G G W-3' PyImPyPyPyPy-Y-PyPyImHpPyIm 2403 5'W C G A C G G W-3' PyImPyPyPyPy-Y-PyPyImHpPyIm 2403 5'W C G A C C G W-3' PyImPyPyPyPy-Y-PyPyImHpPyIm 2404) 5'W C G A C C G W-3' PyImPyPyPyPy-Y-PyPyImHpPyIm 2405 5'W C G A C C G W-3' PyImPyPyPyPy-Y-PyPyImHpPyIm 2405 5'W C G A C C G W-3' PyImPyPyPyPyIm-Y-PyPyImHpPyIm 2406 5'W C G A C G G W-3' PyImPyPyPyImPy-Y-PyPyImHpPyIm 2406 5'W C G A C G G W-3' PyImPyPyPyImPy-Y-ImPyImHpPyIm 2406 5'W C G A C G G W-3' PyImPyPyPyImPy-Y-ImPyImHpPyIm 2406 5'W C G A C G G W-3' PyImPyPyPyImPy-Y-ImPyImHpPyIm 2406 5'W C G A C G G W-3' PyImPyPyPyImPy-Y-ImPyImHpPyIm 2406 5'W C G A C G G W-3' PyImPyPyImPy-Y-ImPyImHpPyIm		2382)	5'W C G A G A A W-3'	PyImPyImPyPy-y-HpHpPyHpPyIm
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2394) 5'W C G A C T A W-3' PyImPyPyHpPy-γ-HpPyImHpPyIm 2395) 5'W C G A C T G W-3' PyImPyPyHpIm-γ-PyPyImHpPyIm 2396) 5'W C G A C T C W-3' PyImPyPyHpPy-γ-ImPyImHpPyIm 2397) 5'W C G A C A T W-3' PyImPyPyPyPy-γ-PyHpImHpPyIm 2398) 5'W C G A C A A W-3' PyImPyPyPyPy-γ-PyHpImHpPyIm 2399) 5'W C G A C A G W-3' PyImPyPyPyPy-γ-PyHpImHpPyIm 2400) 5'W C G A C A C W-3' PyImPyPyPyPy-γ-ImHpImHpPyIm 2401) 5'W C G A C G T W-3' PyImPyPyImPy-γ-PyPyImHpPyIm 2402) 5'W C G A C G A W-3' PyImPyPyImPy-γ-PyPyImHpPyIm 2403) 5'W C G A C C T W-3' PyImPyPyImPy-γ-PyImImHpPyIm 2404) 5'W C G A C C A W-3' PyImPyPyPyPy-γ-HpImImHpPyIm 2405) 5'W C G A C G G W-3' PyImPyPyImIm-γ-PyPyImHpPyIm 2406) 5'W C G A C G C W-3' PyImPyPyImPy-γ-ImPyImHpPyIm 2407) 5'W C G A C C G W-3' PyImPyPyImPy-γ-ImPyImHpPyIm 2407) 5'W C G A C C G W-3' PyImPyPyImPy-γ-ImPyImHpPyIm		2392)	5'W C G A G C C W-3'	PyImPyImPyPy-y-ImImPyHpPyIm
2395) 5'W C G A C T G W-3' PyImPyPyHpIm-γ-PyPyImHpPyIm 2396) 5'W C G A C T C W-3' PyImPyPyHpPy-γ-ImPyImHpPyIm 2397) 5'W C G A C A T W-3' PyImPyPyPyPy-γ-PyHpImHpPyIm 2398) 5'W C G A C A A W-3' PyImPyPyPyPy-γ-HpHpImHpPyIm 2399) 5'W C G A C A G W-3' PyImPyPyPyPy-γ-HpHpImHpPyIm 2400) 5'W C G A C A C W-3' PyImPyPyPyPy-γ-ImHpImHpPyIm 2401) 5'W C G A C G T W-3' PyImPyPyImHp-γ-PyPyImHpPyIm 2402) 5'W C G A C G A W-3' PyImPyPyImPy-γ-HpPyImHpPyIm 2403) 5'W C G A C C T W-3' PyImPyPyPyPy-γ-PyImImHpPyIm 2404) 5'W C G A C C A W-3' PyImPyPyPyPy-γ-HpImImHpPyIm 2405) 5'W C G A C G G W-3' PyImPyPyImIm-γ-PyPyImHpPyIm 2406) 5'W C G A C G C W-3' PyImPyPyImPy-γ-ImPyImHpPyIm 2407) 5'W C G A C C G W-3' PyImPyPyImPy-γ-ImPyImHpPyIm	20	2393)	5'W C G A C T T W-3'	РуІтРуРуНрНр-ү-РуРуІтНрРуІт
2396) 5'W C G A C T C W-3' PyImPyPyHpPy-γ-ImPyImHpPyIm 2397) 5'W C G A C A T W-3' PyImPyPyPyPy-γ-PyHpImHpPyIm 2398) 5'W C G A C A A W-3' PyImPyPyPyPy-γ-HpHpImHpPyIm 2399) 5'W C G A C A G W-3' PyImPyPyPyPy-γ-ImHpImHpPyIm 2400) 5'W C G A C A C W-3' PyImPyPyPyPy-γ-ImHpImHpPyIm 2401) 5'W C G A C G T W-3' PyImPyPyImPy-γ-PyPyImHpPyIm 2402) 5'W C G A C G A W-3' PyImPyPyImPy-γ-PyPyImHpPyIm 2403) 5'W C G A C C T W-3' PyImPyPyPyPy-γ-HpImImHpPyIm 2404) 5'W C G A C C A W-3' PyImPyPyPyPy-γ-HpImImHpPyIm 2405) 5'W C G A C G G W-3' PyImPyPyImPy-γ-PyPyImHpPyIm 2406) 5'W C G A C G C W-3' PyImPyPyImPy-γ-ImPyImHpPyIm 2407) 5'W C G A C C G W-3' PyImPyPyImPy-γ-ImPyImHpPyIm		2394)	5'W C G A C T A W-3'	РуІтРуРуНрРу-ү-НрРуІтНрРуІт
2397) 5'W C G A C A T W-3' PyImPyPyPyHp-γ-PyHpImHpPyIm 2398) 5'W C G A C A A W-3' PyImPyPyPyPy-γ-HpHpImHpPyIm 2399) 5'W C G A C A G W-3' PyImPyPyPyPy-γ-ImHpImHpPyIm 2400) 5'W C G A C A C W-3' PyImPyPyPyPy-γ-ImHpImHpPyIm 2401) 5'W C G A C G T W-3' PyImPyPyImHp-γ-PyPyImHpPyIm 2402) 5'W C G A C G A W-3' PyImPyPyImPy-γ-HpPyImHpPyIm 2403) 5'W C G A C C T W-3' PyImPyPyPyHp-γ-PyImImHpPyIm 2404) 5'W C G A C C A W-3' PyImPyPyPyPy-γ-HpImImHpPyIm 2405) 5'W C G A C G G W-3' PyImPyPyImIm-γ-PyPyImHpPyIm 2406) 5'W C G A C G C W-3' PyImPyPyImPy-γ-ImPyImHpPyIm 2407) 5'W C G A C C G W-3' PyImPyPyImPy-γ-ImPyImHpPyIm		2395)	5'W C G A C T G W-3'	PyImPyPyHpIm-7-PyPyImHpPyIm
2398) 5'W C G A C A A W-3' PyImPyPyPyPy-γ-HpHpImHpPyIm 2399) 5'W C G A C A G W-3' PyImPyPyPyPy-γ-ImHpImHpPyIm 2400) 5'W C G A C A C W-3' PyImPyPyPyPy-γ-ImHpImHpPyIm 2401) 5'W C G A C G T W-3' PyImPyPyImPy-γ-PyPyImHpPyIm 2402) 5'W C G A C G A W-3' PyImPyPyImPy-γ-HpPyImHpPyIm 2403) 5'W C G A C C T W-3' PyImPyPyPyPy-γ-PyImImHpPyIm 2404) 5'W C G A C C A W-3' PyImPyPyPyPy-γ-HpImImHpPyIm 2405) 5'W C G A C G G W-3' PyImPyPyImIm-γ-PyPyImHpPyIm 2406) 5'W C G A C G C W-3' PyImPyPyImPy-γ-ImPyImHpPyIm 2407) 5'W C G A C C G W-3' PyImPyPyImPy-γ-ImPyImHpPyIm		2396)	5'W C G A C T C W-3'	PyImPyPyHpPy-7-ImPyImHpPyIm
2399) 5'W C G A C A G W-3' PyImPyPyPyIm-γ-PyHpImHpPyIm 2400) 5'W C G A C A C W-3' PyImPyPyPyPy-γ-ImHpImHpPyIm 2401) 5'W C G A C G T W-3' PyImPyPyImHp-γ-PyPyImHpPyIm 2402) 5'W C G A C G A W-3' PyImPyPyImPy-γ-HpPyImHpPyIm 30 2403) 5'W C G A C C T W-3' PyImPyPyPyPy-γ-PyImImHpPyIm 2404) 5'W C G A C C A W-3' PyImPyPyPyPy-γ-HpImImHpPyIm 2405) 5'W C G A C G G W-3' PyImPyPyImIm-γ-PyPyImHpPyIm 2406) 5'W C G A C G C W-3' PyImPyPyImPy-γ-ImPyImHpPyIm 2407) 5'W C G A C C G W-3' PyImPyPyIm-γ-PyImImHpPyIm		2397)	5'W C G A C A T W-3'	РуІтРуРуРуНр-ү-РуНрІтНрРуІт
2400) 5'W C G A C A C W-3' PyImPyPyPyPy-γ-ImHpImHpPyIm 2401) 5'W C G A C G T W-3' PyImPyPyImHp-γ-PyPyImHpPyIm 2402) 5'W C G A C G A W-3' PyImPyPyImPy-γ-HpPyImHpPyIm 30 2403) 5'W C G A C C T W-3' PyImPyPyPyPy-γ-HpImImHpPyIm 2404) 5'W C G A C C A W-3' PyImPyPyPyPy-γ-HpImImHpPyIm 2405) 5'W C G A C G G W-3' PyImPyPyImIm-γ-PyPyImHpPyIm 2406) 5'W C G A C G C W-3' PyImPyPyImPy-γ-ImPyImHpPyIm 2407) 5'W C G A C C G W-3' PyImPyPyIm-γ-PyImImHpPyIm	25	2398)	5'W C G A C A A W-3'	РуІмРуРуРуРу-ү-НрНрІмНрРуІм
2401) 5'W C G A C G T W-3' PyImPyPyImHp-γ-PyPyImHpPyIm 2402) 5'W C G A C G A W-3' PyImPyPyImPy-γ-HpPyImHpPyIm 30 2403) 5'W C G A C C T W-3' PyImPyPyPyPy-γ-PyImImHpPyIm 2404) 5'W C G A C C A W-3' PyImPyPyPyPy-γ-HpImImHpPyIm 2405) 5'W C G A C G G W-3' PyImPyPyImIm-γ-PyPyImHpPyIm 2406) 5'W C G A C G C W-3' PyImPyPyImPy-γ-ImPyImHpPyIm 2407) 5'W C G A C C G W-3' PyImPyPyIm-γ-PyImImHpPyIm		2399)	5'W C G A C A G W-3'	РуІмРуРуРуІм-ү-РуНрІмНрРуІм
2402) 5'W C G A C G A W-3' PyImPyPyImPy-γ-HpPyImHpPyIm 2403) 5'W C G A C C T W-3' PyImPyPyPyHp-γ-PyImImHpPyIm 2404) 5'W C G A C C A W-3' PyImPyPyPyPy-γ-HpImImHpPyIm 2405) 5'W C G A C G G W-3' PyImPyPyImIm-γ-PyPyImHpPyIm 2406) 5'W C G A C G C W-3' PyImPyPyImPy-γ-ImPyImHpPyIm 2407) 5'W C G A C C G W-3' PyImPyPyIm-γ-PyImImHpPyIm		2400)	5'W C G A C A C W-3'	PyImPyPyPyPy-7-ImHpImHpPyIm
2403) 5'W C G A C C T W-3' PyImPyPyPyHp-γ-PyImImHpPyIm 2404) 5'W C G A C C A W-3' PyImPyPyPyPy-γ-HpImImHpPyIm 2405) 5'W C G A C G G W-3' PyImPyPyImIm-γ-PyPyImHpPyIm 2406) 5'W C G A C G C W-3' PyImPyPyImPy-γ-ImPyImHpPyIm 2407) 5'W C G A C C G W-3' PyImPyPyIm-γ-PyImImHpPyIm		2401)	5'W C G A C G T W-3'	PyImPyPyImHp-7-PyPyImHpPyIm
2404) 5'W C G A C C A W-3' PyImPyPyPyPy-γ-HpImImHpPyIm 2405) 5'W C G A C G G W-3' PyImPyPyImIm-γ-PyPyImHpPyIm 2406) 5'W C G A C G C W-3' PyImPyPyImPy-γ-ImPyImHpPyIm 2407) 5'W C G A C C G W-3' PyImPyPyPyIm-γ-PyImImHpPyIm		2402)	5'W C G A C G A W-3'	PyImPyPyImPy-γ-HpPyImHpPyIm
2405) 5'W C G A C G G W-3' PyImPyPyImIm-γ-PyPyImHpPyIm 2406) 5'W C G A C G C W-3' PyImPyPyImPy-γ-ImPyImHpPyIm 2407) 5'W C G A C C G W-3' PyImPyPyPyIm-γ-PyImImHpPyIm	30	2403)	5'W C G A C C T W-3'	РуІтРуРуРуНр-ү-РуІтІтНрРуІт
2406) 5'W C G A C G C W-3' PyImPyPyImPy-γ-ImPyImHpPyIm 2407) 5'W C G A C C G W-3' PyImPyPyPyIm-γ-PyImImHpPyIm		2404)	5'W C G A C C A W-3'	PyImPyPyPyPy-γ-HpImImHpPyIm
2407) 5'W C G A C C G W-3' PyImPyPyPyIm-γ-PyImImHpPyIm		2405)	5'W C G A C G G W-3'	PyImPyPyImIm-y-PyPyImHpPyIm
		2406)		PyImPyPyImPy-y-ImPyImHpPyIm
35 2408) 5'W C G A C C C.W-3' PyImPyPyPyPy-γ-ImImImHpPyIm		2407)	5'W C G A C C G W-3'	PyImPyPyPyIm-y-PyImImHpPyIm
	35	2408)	5'W C G A C C C.W-3'	PyImPyPyPyPy-y-ImImImHpPyIm

 	DNA sequence	er recognition of 8-bp 5'-WCGCWNNW-3'
 		aromatic amino acid sequence
	5'W C G C T T T W-3'	РуІтРуНрНрнр-ү-РуРуРуІтРуІт
	5'W C G C T T A W-3'	PyImPyHpHpPy-7-HpPyPyImPyIm
2411)	5'W C G C T T G W-3'	PyImPyHpHpIm-γ-PyPyPyImPyIm
2412)	5'W C G C T T C W-3'	PyImPyHpHpPy-y-ImPyPyImPyIm
2413)	5'W C G C T A T W-3'	РуІmРуHpРуHp-ү-РуHpРуImРуIm
2414)	5'W C G C T A A W-3'	РуІmРуHpРуPy-ү-HpHpPyImPyIm
2415)	5'W C G C T A G W-3'	PyImPyHpPyIm-γ-PyHpPyImPyIm
2416)	5'W C G C T A C W-3'	PyImPyHpPyPy-γ-ImHpPyImPyIm
2417)	5'W C G C T G T W-3'	PyImPyHpImHp-7-PyPyPyImPyIm
2418)	5'W C G C T G A W-3'	PyImPyHpImPy-γ-HpPyPyImPyIm
2419)	5'W C G C T G G W-3'	PyImPyHpImIm-y-PyPyPyImPyIm
2420)	5'W C G C T G C W-3'	PyImPyHpImPy-y-ImPyPyImPyIm
2421)	5'W C G C T C T W-3'	РуІтРуНрРуНр-ү-РуІтРуІтРуІт
2422)	5'W C G C T C A W-3'	PyImPyHpPyPy-γ-HpImPyImPyIm
2423)	5'W C G C T C G W-3'	PyImPyHpPyIm-y-PyImPyImPyIm
2424)	5'W C G C T C C W-3'	PyImPyHpPyPy-γ-ImImPyImPyIm
2425)	5'W C G C A T T W-3'	РуІмРуРуНрНр-ү-РуРуНрІмРуІм
2426)	5'W C G C A T A W-3'	РуІтРуРуНрРу-ү-НрРуНрІтРуІт
2427)	5'W C G C A T G W-3'	РуІмРуРуНрім-ү-РуРуНрімРуім
2428)	5'W C G C A T C W-3'	РуІmРуРуНpРy-ү-ІmРуНpІmРуІm
2429)	5'W C G C A A T W-3'	РуІтРуРуРуНр-ү-РуНрНрІтРуІт
2430)	5'W C G C A A A W-3'	РуІmРуРуРуРу-ү-HpHpHpImРуIm
2431)	5'W C G C A A G W-3'	РуІmРуРуРуІm-ү-РуНрНрІmРуІm
2432)	5'W C G C A A C W-3'	РуІтРуРуРуРу-ү-ІтНрНрІтРуІт
2433)	5'W C G C A G T W-3'	PyImPyPyImHp-y-PyPyHpImPyIm
2434)	5'W C G C A G A W-3'	PyImPyPyImPy-y-HpPyHpImPyIm
2435)	5'W C G C A G G W-3'	PyImPyPyImIm-y-PyPyHpImPyIm
2436)	5'W C G C A G C W-3'	PyImPyPyImPy-y-ImPyHpImPyIm
2437)	5'W C G C A C T W-3'	РуІтРуРуРуНр-ү-РуІтНрІтРуІт
2438)	5'W C G C A C A W-3'	PyImPyPyPyPy-7-HpImHpImPyIm
2439)	5'W C G C A C G W-3'	PyImPyPyPyIm-y-PyImHpImPyIm
2440)	5'W C G C A C C W-3'	PyImPyPyPyPy-7-ImImHpImPyIm

	TABLE 123: 12-ring Hairpin Polyamides	s for recognition of 8-bp 5'-WCGCSNNW-3'
	DNA sequence	aromatic amino acid sequence
	2441) 5'W C G C G T T W-3'	PyImPyImHpHp-7-PyPyPyImPyIm
5	2442) 5'W C G C G T A W-3'	PyImPyImHpPy-7-HpPyPyImPyIm
	2443) 5'W C G C G T G W-3'	PyImPyImHpIm-y-PyPyPyImPyIm
	2444) 5'W C G C G T C W-3'	PyImPyImHpPy-7-ImPyPyImPyIm
	2445) 5'W C G C G A T W-3'	PyImPyImPyHp-y-PyHpPyImPyIm
	2446) 5'W C G C G A A W-3'	PyImPyImPyPy-7-HpHpPyImPyIm
10	2447) 5'W C G C G A G W-3'	PyImPyImPyIm-y-PyHpPyImPyIm
	2448) 5'W C G C G A C W-3'	PyImPyImPyPy-y-ImHpPyImPyIm
	2449) 5'W C G C G G T W-3'	PyImPyImImHp-y-PyPyPyImPyIm
	2450) 5'W C G C G G A W-3'	PyImPyImImPy-7-HpPyPyImPyIm
	2451) 5'W C G C G C T W-3'	PyImPyImPyHp-γ-PyImPyImPyIm
15	2452) 5'W C G C G C A W-3'	PyImPyImPyPy-γ-HpImPyImPyIm
	2453) 5'W C G C C T T W-3'	PyImPyPyHpHp-γ-PyPyImImPyIm
	2454) 5'W C G C C T A W-3'	PyImPyPyHpPy-γ-HpPyImImPyIm
	2455) 5'W C G C C T G W-3'	PyImPyPyHpIm-y-PyPyImImPyIm
	2456) 5'W C G C C T C W-3'	PyImPyPyHpPy-y-ImPyImImPyIm
20	2457) 5'W C G C C A T W-3'	РуІтРуРуРуНр-ү-РуНрІтІтРуІт
	2458) 5'W C G C C A A W-3'	PyImPyPyPyPy-γ-HpHpImImPyIm
	2459) 5'W C G C C A G W-3'	PyImPyPyPyIm-y-PyHpImImPyIm
	2460) 5'W C G C C A C W-3'	PyImPyPyPyPy-y-ImHpImImPyIm
	2461) 5'W C G C C G T W-3'	PyImPyPyImHp-7-PyPyImImPyIm
25	2462) 5'W C G C C G A W-3'	PyImPyPyImPy-γ-HpPyImImPyIm ·
	2463) 5'W C G C C T W-3'	PyImPyPyPyHp-γ-PyImImImPyIm
	2464) 5'W C G C C A W-3'	PyImPyPyPyPy-γ-HpImImImPyIm
	G91) 5'W C G C G G W-3'	PyImPyImImIm-y-PyPyPyImPyIm
	G92) 5'W C G C G G C W-3'	PyImPyImImPy-7-ImPyPyImPyIm
30	G93) 5'W C G C G C G W-3'	PyImPyImPyIm-Y-PyImPyImPyIm
	G94) 5'W C G C G C C W-3'	PyImPyImPyPy-γ-ImImPyImPyIm
	G95) 5'W C G C C G G W-3'	PyImPyPyImIm-γ-PyPyImImPyIm
	G96) 5'W C G C C G C W-3'	PyImPyPyImPy-γ-ImPyImImPyIm
	G97) 5'W C G C C C G W-3'	PyImPyPyPyIm-γ-PyImImImPyIm
35	G98) 5'W C G C C C W-3'	PyImPyPyPyPy-γ-ImImImImPyIm

_		DNA coguence	or recognition of 8-bp 5'-WCCGWNNW-3'
	,	DNA sequence	aromatic amino acid sequence
	2465)	5'W C C G T T T W-3'	РуРуІmНpНpНp-γ-РуРуРуРуImIm
	2466)	5'W C C G T T A W-3'	РуРуІmНpНpРy-ү-HpРyРyРyImIm
	2467)	5'W C C G T T G W-3'	PyPyImHpHpIm-y-PyPyPyPyImIm
	2468)	5'W C C G T T C W-3'	PyPyImHpHpPy-y-ImPyPyPyImIm
	2469)	5'W C C G T A T W-3'	РуРуІтНрРуНр-ү-РуНрРуРуІтіт
	2470)	5'W C C G T A A W-3'	РуРуІmHpРуРу-ү-HpHpРуРуІmIm
	2471)	5'W C C G T A G W-3'	PyPyImHpPyIm-y-PyHpPyPyImIm
	2472)	5'W C C G T A C W-3'	PyPyImHpPyPy-y-ImHpPyPyImIm
	2473)	5'W C C G T G T W-3'	РуРуІmНpImHp-ү-РуРуРуРуImIm
	2474)	5'W C C G T G A W-3'	PyPyImHpImPy-y-HpPyPyPyImIm
	2475)	5'W C C G T G G W-3'	PyPyImHpImIm-y-PyPyPyPyImIm
	2476)	5'W C C G T G C W-3'	PyPyImHpImPy-y-ImPyPyPyImIm
	2477)	5'W C C G T C T W-3'	РуРуІmНpРуHp-ү-РуІmРуРуІmІm
	2478)	5'W C C G T C A W-3'	РуРуІmНpРуРу-ү-HpImРуРуImIm
	2479)	5'W C C G T C G W-3'	PyPyImHpPyIm-y-PyImPyPyImIm
	2480)	5'W C C G T C C W-3'	PyPyImHpPyPy-y-ImImPyPyImIm
	2481)	5'W C C G A T T W-3'	РуРуІтРуНрНр-ү-РуРуНрРуІтіт
	2482)	5'W C C G A T A W-3'	РуРуІmРуНpРу-ү-НpРуНpРyImIm
	2483)	5'W C C G A T G W-3'	РуРуІтРуНрІт-ү-РуРуНрРуІтіт
	2484)	5'W C C G A T C W-3	РуРуІтРуНрРу-ү-ІтРуНрРуІтіт
	2485)	5'W C C G A A T W-3'	РуРуІтРуРуНр-ү-РуНрНрРуІтіт
	2486)	5'W C C G A A A W-3'	РуРуІтРуРуРу-ү-НрНрРрРуІтІт
	2487)	5'W C C G A A G W-3'	PyPyImPyPyIm-y-PyHpHpPyImIm
	2488)	5'W C C G A A C W-3'	РуРуІтРуРуРу-ү-ІтНрНрРуІтІт
	2489)	5'W C C G A G T W-3'	РуРуІтРуІтНр-ү-РуРуНрРуІтіт
	2490)	5'W C C G A G A W-3'	РуРуІтРуІтРу-ү-НрРуНрРуІтіт
	2491)	5'W C C G A G G W-3'	РуРуІmРуІmIm-ү-РуРуНpРуImIm
	2492)	5'W C C G A G C W-3'	PyPyImPyImPy-γ-ImPyHpPyImIm
	2493)	5'W C C G A C T W-3'	РуРуІтРуРуНр-ү-РуІтНрРуІтІт
	2494)	5'W C C G A C A W-3'	РуРуІтРуРуРу-ү-НрІтНрРуІтІт
	2495)	5'W C C G A C G W-3'	РуРуІmРуРуІm-ү-РуІmНpРуІmIm
	2496)	5'W C C G A C C W-3'	PyPyImPyPyPy-y-ImImHpPyImIm

	TA	ABLE 125: 12-ring Hairpin Polyamides for re	ecognition of 8-bp 5'-WCCGSNNW-3'
		DNA sequence	aromatic amino acid sequence
	2497)	5'W C C G G T T W-3'	PyPyImImHpHp-γ-PyPyPyPyImIm
5	2498)	5'W C C G G T A W-3'	PyPyImImHpPy-7-HpPyPyPyImIm
	2499)	5'W C C G G T G W-3'	PyPyImImHpIm-y-PyPyPyPyImIm
	2500)	5'W C C G G T C W-3'	PyPyImImHpPy-y-ImPyPyPyImIm
	2501)	5'W C C G G A T W-3'	${\tt PyPyImImPyHp-\gamma-PyHpPyPyImIm}$
	2502)	5'W C C G G A A W-3'	PyPyImImPyPy-7-HpHpPyPyImIm
10	2503)	5'W C C G G A G W-3'	PyPyImImPyIm-y-PyHpPyPyImIm
	2504)	5'W C C G G A C W-3'	PyPyImImPyPy-y-ImHpPyPyImIm
	2505)	5'W C C G G G T W-3'	PyPyImImImHp-y-PyPyPyPyImIm
	2506)	5'W C C G G G A W-3'	PyPyImImImPy-7-HpPyPyPyImIm
	2507)	5'W C C G G C T W-3'	PyPyImImPyHp-y-PyImPyPyImIm
15	2508)	5'W C C G G C A W-3'	PyPyImImPyPy-7-HpImPyPyImIm
	2509)	5'W C C G C T T W-3'	PyPyImPyHpHp-y-PyPyImPyImIm
	2510)	5'W C C G C T A W-3'	PyPyImPyHpPy-7-HpPyImPyImIm
	2511)	5'W C C G C T G W-3'	PyPyImPyHpIm-y-PyPyImPyImIm
	2512)	5'W C C G C T C W-3'	PyPyImPyHpPy-y-ImPyImPyImIm
20	2513)	5'W C C G C A T W-3'	PyPyImPyPyHp-y-PyHpImPyImIm
	2514)	5'W C C G C A A W-3'	PyPyImPyPyPy-7-HpHpImPyImIm
	2515)	5'W C C G C A G W-3'	PyPyImPyPyIm-y-PyHpImPyImIm
	2516)	5'W C C G C A C W-3'	PyPyImPyPyPy-y-ImHpImPyImIm
	2517)	5'W C C G C G T W-3'	PyPyImPyImHp-γ-PyPyImPyImIm
25	2518)	5'W C C G C G A W-3'	PyPyImPyImPy-7-HpPyImPyImIm
	2519)	5'W C C G C C T W-3'	PyPyImPyPyHp-7-PyImImPyImIm
	2520)	5'W C C G C C A W-3'	PyPyImPyPyPy-γ-HpImImPyImIm
	G99)	5'W C C G G G W-3'	PyPyImImImIm-y-PyPyPyPyImIm
	G100)	5'W C C G G G C W-3'	PyPyImImImPy-γ-ImPyPyPyImIm
30	G101)	5'W C C G G C G W-3'	PyPyImImPyIm-γ-PyImPyPyImIm
	G102)	5'W C C G G C C W-3'	PyPyImImPyPy-y-ImImPyPyImIm
	G103)	5'W C C G C G G W-3'	PyPyImPyImIm-y-PyPyImPyImIm
	G104)	5'W C C G C G C W-3'	PyPyImPyImPy-7-ImPyImPyImIm
	G105)	5'W C C G C C G W-3'	PyPyImPyPyIm-y-PyImImPyImIm
35	G106)	5'W C C G C C C W-3'	PyPyImPyPyPy-7-ImImImPyImIm

_		DNA sequence	for recognition of 8-bp 5'-WCCTWNNW-3'
=			aromatic amino acid sequence
	2521)	5'W C C T T T T W-3'	РуРуНрНрНр-ү-РуРуРуРуІмІт
	2522)	5'W C C T T T A W-3'	РуРуНрНрРрРу-ү-НрРуРуРуІmIm
	2523)	5'W C C T T T G W-3'	РуРуНрНрНрІм-ү-РуРуРуРуІмІм
	2524)	5'W C C T T T C W-3'	РуРуНрНрРрРу-ү-ІmРуРуРуІmІm
	2525)	5'W C C T T A T W-3'	РуРуНрНрРуНр-ү-РуНрРуРуІмІм
	2526)	5'W C C T T A A W-3'	РуРуНрНрРуРу-ү-НрНрРуРуImIm
	2527)	5'W C C T T A G W-3'	РуРуНрНрРуІм-ү-РуНрРуРуІмІм
	2528)	5'W C C T T A C W-3'	РуРуНрНрРуРу-ү-ІmНpРуРуІmІm
	2529)	5'W C C T T G T W-3'	РуРуНрНрІтНр-ү-РуРуРуРуІтІт
	2530)	5'W C C T T G A W-3'	РуРуНрНрImРу-ү-НрРуРуРуImIm
	2531)	5'W C C T T G G W-3'	РуРуНрНрІтіт-ү-РуРуРуРуІтіт
	2532)	5'W C C T T G C W-3'	РуРуНрНрІтРу-ү-ІтРуРуРуІтІт
	2533)	5'W C C T T C T W-3'	РуРуНрНрРуНр-ү-РуІтРуРуІтІт
	2534)	5'W C C T T C A W-3'	РуРуНрНрРуРу-ү-НрІтРуРуІтІт
	2535)	5'W C C T T C G W-3'	РуРуНрНрРуІт-ү-РуІтРуРуІтІт
	2536)	5'W C C T T C C W-3'	РуРуНрНрРуРу-ү-ІтІтРуРуІтІт
	2537)	5'W C C T A T T W-3'	РуРуНрРуНрНр-ү-РуРуНрРуІтІм
	2538)	5'W C C T A T A W-3'	РуРуНрРуНрРу-ү-НрРуНрРуImIm
	2539)	5'W C C T A T G W-3'	РуРуНрРуНрІт-ү-РуРуНрРуІтІт
	2540)	5'W C C T A T C W-3'	РуРуНрРуНрРу-ү-ІmРуНрРуІmІm
	2541)	5'W C C T A A T W-3'	РуРуНрРуРуНр-ү-РуНрНрРуІтІт
	2542)	5'W C C T A A A W-3'	РуРуНрРуРуРу-ү-НрНрНрРуІтІт
	2543)	5'W C C T A A G W-3'	РуРуНрРуРуІm-ү-РуНрНрРуІmІm
	2544)	5'W C C T A A C W-3'	РуРуНрРуРуРу-ү-ІmНpНpРyImIm
	2545)	5'W C C T A G T W-3'	РуРуНрРуІтНр-ү-РуРуНрРуІтІт
	2546)	5'W C C T A G A W-3'	РуРуНрРуІтРу-ү-НрРуНрРуІтІт
	2547)	5'W C C T A G G W-3'	PyPyHpPyImIm-y-PyPyHpPyImIm
	2548)	5'W C C T A G C W-3'	РуРуНрРуІтРу-ү-ІтРуНрРуІтІт
	2549)	5'W C C T A C T W-3'	РуРуНрРуРуНр-ү-РуІтНрРуІтІт
	2550)	5'W C C T A C A W-3'	РуРуНрРуРуРу-ү-НрІтНрРуІтІт
	2551)	5'W C C T A C G W-3'	PyPyHpPyPyIm-γ-PyImHpPyImIm
	2552)	5'W C C T A C C W-3'	РуРуНрРуРуРу-ү-ІмІмНрРуІмІм

	TABLE 127: 12-ring Hairpin Polyamides	for recognition of 8-bp 5'-WCCTSNNW-3'
	DNA sequence	aromatic amino acid sequence
	2553) 5'W C C T G T T W-3'	РуРуНрІmНрНр-ү-РуРуРуРуІmІm
5	2554) 5'W C C T G T A W-3'	РуРуНрІмНрРу-ү-НрРуРуРуІмІм
	2555) 5'W C C T G T G W-3'	PyPyHpImHpIm-y-PyPyPyPyImIm
	2556) 5'W C C T G T C W-3'	${\tt PyPyHpImHpPy-\gamma-ImPyPyPyImIm}$
	2557) 5'W C C T G A T W-3'	РуРуНрІmРуНр-ү-РуНрРуРуІmІm
	2558) 5'W C C T G A A W-3'	РуРуНрІтРуРу-ү-НрНрРуРуІтіт
10	2559) 5'W C C T G A G W-3'	PyPyHpImPyIm-y-PyHpPyPyImIm
	2560) 5'W C C T G A C W-3'	PyPyHpImPyPy-y-ImHpPyPyImIm
	2561) 5'W C C T G G T W-3'	PyPyHpImImHp-7-PyPyPyPyImIm
	2562) 5'W C C T G G A W-3'	PyPyHpImImPy-7-HpPyPyPyImIm
	2563) 5'W C C T G C T W-3'	PyPyHpImPyHp-y-PyImPyPyImIm
15	2564) 5'W C C T G C A W-3'	PyPyHpImPyPy-7-HpImPyPyImIm
	2565) 5'W C C T G G G W-3'	PyPyHpImImIm-y-PyPyPyPyImIm
	2566) 5'W C C T G G C W-3'	PyPyHpImImPy-y-ImPyPyPyImIm
	2567) 5'W C C T G C G W-3'	PyPyHpImPyIm-y-PyImPyPyImIm
	2568) 5'W C C T G C C W-3'	PyPyHpImPyPy-y-ImImPyPyImIm
20	2569) 5'W C C T C T T W-3'	PyPyHpPyHpHp-γ-PyPyImPyImIm
	2570) 5'W C C T C T A W-3'	РуРуНрРуНрРу-ү-НрРуІтРУІТ
	2571) 5'W C C T C T G W-3'	PyPyHpPyHpIm-γ-PyPyImPyImIm
	2572) 5'W C C T C T C W-3'	PyPyHpPyHpPy-γ-ImPyImPyImIm
	2573) 5'W C C T C A T W-3'	РуРуНрРуРуНр-ү-РуНрІтРУІтІт
25	2574) 5'W C C T C A A W-3'	РуРуНрРуРуРу-ү-НрНрІmРуІmІm
	2575) 5'W C C T C A G W-3'	PyPyHpPyPyIm-γ-PyHpImPyImIm
	2576) 5'W C C T C A C W-3'	PyPyHpPyPyPy-y-ImHpImPyImIm
	2577) 5'W C C T C G T W-3'	PyPyHpPyImHp-γ-PyPyImPyImIm
	2578) 5'W C C T C G A W-3'	PyPyHpPyImPy-γ-HpPyImPyImIm
30	2579) 5'W C C T C C T W-3'	РуРуНрРуРуНр-ү-РуІтІтРуІтІт
	2580) 5'W C C T C C A W-3'	PyPyHpPyPyPy-y-HpImImPyImIm
	2581) 5'W C C T C G G W-3'	PyPyHpPyImIm-y-PyPyImPyImIm
	2582) 5'W C C T C G C W-3'	PyPyHpPyImPy-γ-ImPyImPyImIm
	2583) 5'W C C T C C G W-3'	PyPyHpPyPyIm-γ-PyImImPyImIm
35	2584) 5'W C C T C C C W-3'	PyPyHpPyPyPy-y-ImImImPyImIm

	TABLE 128: 12-ring Hairpin Polyami	des for recognition of 8-bp 5'-WCCAWNNW-3'
-	DNA sequence	aromatic amino acid sequence
	2585) 5'W C C A T T T W-3'	РуРуРуНрНрНр-ү-РуРуРуНрІmІm
5	2586) 5'W C C A T T A W-3'	РуРуРуНрНрРу-ү-НрРуРуНрІmIm
	2587) 5'W C C A T T G W-3'	РуРуРуНрНрІт-ү-РуРуРуНрІтіт
	2588) 5'W C C A T T C W-3'	РуРуРуНрНрРу-ү-ІтРуРуНрІтІт
	2589) 5'W C C A T A T W-3'	РуРуРуНрРуНр-ү-РуНрРуНрІmІm
	2590) 5'W C C A T A A W-3'	РуРуРуНрРуРу-ү-НрНрРуНрІmIm
10	2591) 5'W C C A T A G W-3'	РуРуРуНрРуІт-ү-РуНрРуНрІтіт
	2592) 5'W C C A T A C W-3'	РуРуРуНрРуРу-ү-ІmНpРуНpІmІm
	2593) 5'W C C A T G T W-3'	PyPyPyHpImHp-γ-PyPyPyHpImIm
	2594) 5'W C C A T G A W-3'	РуРуРуНрІшРу-ү-НрРуРуНрІшІш
	2595) 5'W C C A T G G W-3'	PyPyPyHpImIm-y-PyPyPyHpImIm
15	2596) 5'W C C A T G C W-3'	PyPyPyHpImPy-7-ImPyPyHpImIm
	2597) 5'W C C A T C T W-3'	${ t PyPyPyHpPyHp-\gamma-PyImPyHpImIm}$
	2598) 5'W C C A T C A W-3'	PyPyPyHpPyPy-y-HpImPyHpImIm
	2599) 5'W C C A T C G W-3'	PyPyPyHpPyIm-y-PyImPyHpImIm
	2600) 5'W C C A T C C W-3'	PyPyPyHpPyPy-y-ImImPyHpImIm
20	2601) 5'W C C A A T T W-3'	РуРуРуРуНрНр-ү-РуРуНрНрІmІm
	2602) 5'W C C A A T A W-3'	РуРуРуНрРу-ү-HpРуНpНpImIm
	2603) 5'W C C A A T G W-3'	РуРуРуНрІт-ү-РуРуНрНрІтіт
	2604) 5'W C C A A T C W-3'	РуРуРуНрРу-ү-ІmРуНрНрІmІm
	2605) 5'W C C A A A T W-3'	РуРуРуРуНр-ү-РуНрНрНрІмІм
25	2606) 5'W C C A A A A W-3'	РуРуРуРуРу-ү-НрНрНрНрІmIm
	2607) 5'W C C A A A G W-3'	PyPyPyPyIm-y-PyHpHpHpImIm
	2608) 5'W C C A A A C W-3'	PyPyPyPyPy-y-ImHpHpHpImIm
	2609) 5'W C C A A G T W-3'	PyPyPyImHp-y-PyPyHpHpImIm
	2610) 5'W C C A A G A W-3'	PyPyPyImPy-y-HpPyHpHpImIm
30	2611) 5'W C C A A G G W-3'	PyPyPyPyImIm-y-PyPyHpHpImIm
	2612) 5'W C C A A G C W-3'	PyPyPyImPy-y-ImPyHpHpImIm
	2613) 5'W C C A A C T W-3'	РуРуРуРуРуНр-ү-РуІтНрНрІтІт
	2614) 5'W C C A A C A W-3'	PyPyPyPyPyPy-y-HpImHpHpImIm
	2615) 5'W C C A A C G W-3'	PyPyPyPyIm-7-PyImHpHpImIm
35	2616) 5'W C C A A C C W-3'	PyPyPyPyPyPy-y-ImImHpHpImIm

-	TABLE 129: 12-ring Hairpin Polyamides fo	
	DNA scquence	aromatic amino acid sequence
	2617) 5'W C C A G T T W-3'	PyPyPyImHpHp-y-PyPyPyHpImIm
5	2618) 5'W C C A G T A W-3'	РуРуРуІтНрРу-ү-НрРуРуНрІтІт
	2619) 5'W C C A G T G W-3'	PyPyPyImHpIm-y-PyPyPyHpImIm
	2620) 5'W C C A G T C W-3'	PyPyPyImHpPy-y-ImPyPyHpImIm
	2621) 5'W C C A G A T W-3'	PyPyPyImPyHp-γ-PyHpPyHpImIm
	2622) 5'W C C A G A A W-3'	PyPyPyImPyPy-γ-HpHpPyHpImIm
10	2623) 5'W C C A G A G W-3'	PyPyPyImPyIm-γ-PyHpPyHpImIm
	2624) 5'W C C A G A C W-3'	PyPyPyImPyPy-γ-ImHpPyHpImIm
	2625) 5'W C C A G G T W-3'	PyPyPyImImHp-y-PyPyPyHpImIm
	2626) 5'W C C A G G A W-3'	PyPyPyImImPy-y-HpPyPyHpImIm
	2627) 5'W C C A G C T W-3'	PyPyPyImPyHp-y-PyImPyHpImIm
15	2628) 5'W C C A G C A W-3'	PyPyPyImPyPy-y-HpImPyHpImIm
	2629) 5'W C C A G G G W-3'	PyPyPyImImIm-y-PyPyPyHpImIm
	2630) 5'W C C A G G C W-3'	PyPyPyImImPy-y-ImPyPyHpImIm
	2631) 5'W C C A G C G W-3'	PyPyPyImPyIm-y-PyImPyHpImIm
	2632) 5'W C C A G C C W-3'	PyPyPyImPyPy-y-ImImPyHpImIm
20	2633) 5'W C C A C T T W-3'	${ t PyPyPyPyHpHp-\gamma-PyPyImHpImIm}$
	2634) 5'W C C A C T A W-3'	РуРуРуРуНрРу-ү-НрРуІтНРІтіт
	2635) 5'W C C A C T G W-3'	PyPyPyPyHpIm-y-PyPyImHpImIm
	2636) 5'W C C A C T C W-3'	${ t PyPyPyPyHpPy-\gamma-ImPyImHpImIm}$
	2637) 5'W C C A C A T W-3'	${ t PyPyPyPyHp-\gamma-PyHpImHpImIm}$
25	2638) 5'W C C A C A A W-3'	РуРуРуРуРуРу-ү-НрНрІmНрІmІm
	2639) 5'W C C A C A G W-3'	PyPyPyPyIm-y-PyHpImHpImIm
	2640) 5'W C C A C A C W-3'	PyPyPyPyPy-y-ImHpImHpImIm
	2641) 5'W C C A C G T W-3'	PyPyPyImHp-γ-PyPyImHpImIm
	2642) 5'W C C A C G A W-3'	PyPyPyImPy-γ-HpPyImHpImIm
30	2643) 5'W C C A C C T W-3'	РуРуРуРуРуНр-ү-РуІтІтНрІтіт
	2644) 5'W C C A C C A W-3'	PyPyPyPyPyPy-γ-HpImImHpImIm
	2645) 5'W C C A C G G W-3'	PyPyPyPyImIm-γ-PyPyImHpImIm
	2646) 5'W C C A C G C W-3'	PyPyPyImPy-y-ImPyImHpImIm
	2647) 5'W C C A C C G W-3'	PyPyPyPyPyIm-γ-PyImImHpImIm
35	2648) 5'W C C A C C C W-3'	PyPyPyPyPyPy-y-ImImImHpImIm

		or recognition of 8-bp 5'-WCCCWNNW-3'
	DNA sequence	aromatic amino acid sequence
	2649) 5'W C C C T T T W-3'	${ t PyPyPyHpHpHp-\gamma-PyPyPyImImIm}$
5	2650) 5'W C C C T T A W-3'	РуРуРуНрНрРу-ү-НрРуРуІmImIm
•	2651) 5'W C C C T T G W-3'	РуРуРуНрНрІт-ү-РуРуРуІтІт
	2652) 5'W C C C T T C W-3'	PyPyPyHpHpPy-y-ImPyPyImImIm
	2653) 5'W C C C T A T W-3'	${ t PyPyPyHpPyHp-\gamma-PyHpPyImImIm}$
	2654) 5'W C C C T A A W-3'	РуРуРуНрРуРу-ү-НрНрРуImImIm
10	2655) 5'W C C C T A G W-3'	PyPyPyHpPyIm-y-PyHpPyImImIm
	2656) 5'W C C C T A C W-3'	РуРуРуНрРуРу-ү-ImHpРуImImIm
	2657) 5'W C C C T G T W-3'	РуРуРуНрІмНр-ү-РуРуРуІмІмІм
	2658) 5'W C C C T G A W-3'	РуРуРуНрІmРу-ү-НрРуРуІmІmІm
	2659) 5'W C C C T G G W-3'	PyPyPyHpImIm-y-PyPyPyImImIm
15	2660) 5'W C C C T G C W-3'	PyPyPyHpImPy-γ-ImPyPyImImIm
	2661) 5'W C C C T C T W-3'	PyPyPyHpPyHp-y-PyImPyImImIm
	2662) 5'W C C C T C A W-3'	PyPyPyHpPyPy-γ-HpImPyImImIm
	2663) 5'W C C C T C G W-3'	PyPyPyHpPyIm-γ-PyImPyImImIm
	2664) 5'W C C C T C C W-3'	PyPyPyHpPyPy-γ-ImImPyImImIm
20	2665) 5'W C C C A T T W-3'	РуРуРуРуНрНр-ү-РуРуНрІтІш
	2666) 5'W C C C A T A W-3'	РуРуРуРуНрРу-ү-НрРуНрІмІт
	2667) 5'W C C C A T G W-3'	PyPyPyPyHpIm-y-PyPyHpImImIm
	2668) 5'W C C C A T C W-3'	РуРуРуРуНрРу-ү-ImРуНрImImIm
	2669) 5'W C C C A A T W-3'	$PyPyPyPyHp-\gamma-PyHpHpImImIm$
25	2670) 5'W C C C A A A W-3'	PyPyPyPyPyPy-y-HpHpHpImImIm
	2671) 5'W C C C A A G W-3'	PyPyPyPyIm-y-PyHpHpImImIm
	2672) 5'W C C C A A C W-3'	PyPyPyPyPy-γ-ImHpHpImImIm
	2673) 5'W C C C A G T W-3'	PyPyPyPyImHp-γ-PyPyHpImImIm
	2674) 5'W C C C A G A W-3'	PyPyPyPyImPy-γ-HpPyHpImImIm
30	2675) 5'W C C C A G G W-3'	PyPyPyPyImIm-y-PyPyHpImImIm
	2676) 5'W C C C A G C W-3'	PyPyPyPyImPy-γ-ImPyHpImImIm
	2677) 5'W C C C A C T W-3'	PyPyPyPyPyHp-γ-PyImHpImImIm
	2678) 5'W C C C A C A W-3'	PyPyPyPyPyPy-y-HpImHpImImIm
	2679) 5'W C C C A C G W-3'	PyPyPyPyIm-y-PyImHpImImIm
35	2680) 5'W C C C A C C W-3'	PyPyPyPyPyPy-y-ImImHpImImIm

		for recognition of 8-bp 5'-WCCCSNNW-3'
	DNA sequence	aromatic amino acid sequence
	2681) 5'W C C C G T T W-3'	PyPyPyImHpHp-y-PyPyPyImImIm
5	2682) 5'W C C C G T A W-3'	PyPyPyImHpPy-y-HpPyPyImImIm
	2683) 5'W C C C G T G W-3'	PyPyPyImHpIm-y-PyPyPyImImIm
	2684) 5'W C C C G T C W-3'	PyPyPyImHpPy-y-ImPyPyImImIm
	2685) 5'W C C C G A T W-3'	PyPyPyImPyHp-y-PyHpPyImImIm
	2686) 5'W C C C G A A W-3'	PyPyPyImPyPy-y-HpHpPyImImIm
10	2687) 5'W C C C G A G W-3'	PyPyPyImPyIm-7-PyHpPyImImIm
	2688) 5'W C C C G A C W-3'	PyPyPyImPyPy-7~ImHpPyImImIm
	2689) 5'W C C C G G T W-3'	PyPyPyImImHp-y-PyPyPyImImIm
	2690) 5'W C C C G G A W-3'	PyPyPyImImPy-7-HpPyPyImImIm
	2691) 5'W C C C G C T W-3'	PyPyPyImPyHp-y-PyImPyImImIm
15	2692) 5'W C C C G C A W-3'	PyPyPyImPyPy-7-HpImPyImImIm
	2693) 5'W C C C C T T W-3'	PyPyPyHpHp-y-PyPyImImImIm
	2694) 5'W C C C C T A W-3'	PyPyPyHpPy-7-HpPyImImImIm
	2695) 5'W C C C C T G W-3'	PyPyPyPyHpIm-7-PyPyImImImIm
	2696) 5'W C C C C T C W-3'	РуРуРуНрРу-ү-ImPyImImImIm
20	2697) 5'W C C C C A T W-3'	РуРуРуРуРуНр-ү-РуНрІмІмІті
	2698) 5'W C C C C A A W-3'	PyPyPyPyPyPy-7-HpHpImImImIm
	2699) 5'W C C C C A G W-3'	PyPyPyPyIm-y-PyHpImImImIm
	2690) 5'W C C C C A C W-3'	РуРуРуРуРуРу-ү-ImHpImImImIm
	2701) 5'W C C C C G T W-3'	PyPyPyPyImHp-γ-PyPyImImImIm
25	2702) 5'W C C C C G A W-3'	PyPyPyPyImPy-γ-HpPyImImImIm
	2703) 5'W C C C C C T W-3'	PyPyPyPyHp-γ-PyImImImImIm
	2704) 5'W C C C C C A W-3'	PyPyPyPyPy-γ-HpImImImImIm
	G107) 5'W C C C G G G W-3'	PyPyPyImImIm-γ-PyPyPyImImIm
	G108) 5'W C C C G G C W-3'	PyPyPyImImPy-γ-ImPyPyImImIm
30	G109) 5'W C C C G C G W-3'	PyPyPyImPyIm-γ-PyImPyImImIm
	G110) 5'W C C C G C C W-3'	PyPyPyImPyPy-γ-ImImPyImImIm
	G111) 5'W C C C G G W-3'	PyPyPyPyImIm-y-PyPyImImImIm
	G112) 5'W C C C C G C W-3'	PyPyPyPyImPy-γ-ImPyImImImIm
	G113) 5'W C C C C G W-3'	PyPyPyPyPyIm-y-PyImImImImIm
35	G114) 5'W C C C C C W-3'	PyPyPyPyPyPy-y-ImImImImImIm

	TABLE 132: 12-ring Hairpin Polyamides	s for recognition of 8-bp 5'-WCAGWNNW-3'
-	DNA sequence	aromatic amino acid sequence
	2705) 5'W C A G T T T W-3'	РуРуІтнрнрнр-ү-РуРуРуРунріт
5	2706) 5'W C A G T T A W-3'	РуРуІтНрНрРу-ү-НрРуРуРуНрІт
	2707) 5'W C A G T T G W-3'	РуРуІтНрНрІт-ү-РуРуРуРуНрІт
	2708) 5'W C A G T T C W-3'	РуРуІтНрНрРу-ү-ІтРуРуРуНрІт
	2709) 5'W C A G T A T W-3'	РуРуІтНрРуНр-ү-РуНрРуРуНрІт
	2700) 5'W C A G T A A W-3'	РуРуІтНрРуРу-ү-НрНрРуРуНрІт
10	2711) 5'W C A G T A G W-3'	РуРуІтНрРуІт-ү-РуНрРуРуНрІт
	2712) 5'W C A G T A C W-3'	РуРуІмНрРуРу-ү-ІмНрРуРуНрІм
	2713) 5'W C A G T G T W-3	РуРуІмНрІмНр-ү-РуРуРуРуНрІм
	2714) 5'W C A G T G A W-3'	РуРуІтНрІтРу-ү-НрРуРуРуНрІт
	2715) 5'W C A G T G G W-3'	PyPyImHpImIm-7-PyPyPyPyHpIm
15	2716) 5'W C A G T G C W-3'	PyPyImHpImPy-7-ImPyPyPyHpIm
	2717) 5'W C A G T C T W-3'	РуРуІтНрРуНр-ү-РуІтРуРуНрІт
	2718) 5'W C A G T C A W-3'	РуРуІmHpРуРу-ү-HpImРуРуHpIm
	2719) 5'W C A G T C G W-3'	PyPyImHpPyIm-7-PyImPyPyHpIm
	2720) 5'W C A G T C C W-3'	PyPyImHpPyPy-y-ImImPyPyHpIm
20	2721) 5'W C A G A T T W-3'	РуРуІmРуНрНр-ү-РуРуНрРуНрІm
	2722) 5'W C A G A T A W-3'	РуРуІmРуНpРу-ү-НpРуНpРуНpІm
	2723) 5'W C A G A T G W-3'	РуРуІmРуНрІm-ү-РуРуНрРуНрІm
	2724) 5'W C A G A T C W-3'	PyPyImPyHpPy-y-ImPyHpPyHpIm
	2725) 5'W C A G A A T W-3'	РуРуІмРуРуНр-ү-РуНрНрРуНрІм
25	2726) 5'W C A G A A A W-3'	РуРуІmРуРуРу-ү-HpHpHpРyHpIm
	2727) 5'W C A G A A G W-3'	PyPyImPyPyIm-y-PyHpHpPyHpIm
	2728) 5'W C A G A A C W-3'	PyPyImPyPyPy-γ-ImHpHpPyHpIm
	2729) 5'W C A G A G T W-3'	PyPyImPyImHp-γ-PyPyHpPyHpIm
	2730) 5'W C A G A G A W-3'	РуРуІmРуImРу-ү-HpРуHpРуHpIm
30	2731) 5'W C A G A G G W-3'	PyPyImPyImIm-y-PyPyHpPyHpIm
	2732) 5'W C A G A G C W-3'	PyPyImPyImPy-y-ImPyHpPyHpIm
	2733) 5'W C A G A C T W-3'	PyPyImPyPyHp-y-PyImHpPyHpIm
	2734) 5'W C A G A C A W-3'	PyPyImPyPyPy-γ-HpImHpPyHpIm
	2735) 5'W C A G A C G W-3'	PyPyImPyPyIm-y-PyImHpPyHpIm
35	2736) 5'W C A G A C C W-3'	PyPyImPyPyPy-γ-ImImHpPyHpIm

-	TABLE 133: 12-ring Hairpin Polyamides fo	or recognition of 8-bp 5'-WCAGSNNW-3'
=	DNA sequence	aromatic amino acid sequence
	2737) 5'W C A G G T T W-3'	PyPyImImHpHp-y-PyPyPyPyHpIm
5	2738) 5'W C A G G T A W-3'	РуРуІмІмНрРу-ү-НрРуРуРуНрІм
	2739) 5'W C A G G T G W-3'	PyPyImImHpIm-y-PyPyPyPyHpIm
	2740) 5'W C A G G T C W-3'	PyPyImImHpPy-y-ImPyPyPyHpIm
	2741) 5'W C A G G A T W-3'	PyPyImImPyHp-y-PyHpPyPyHpIm
	2742) 5'W C A G G A A W-3'	PyPyImImPyPy-y-HpHpPyPyHpIm
10	2743) 5'W C A G G A G W-3'	PyPyImImPyIm-y-PyHpPyPyHpIm
	2744) 5'W C A G G A C W-3'	PyPyImImPyPy-y-ImHpPyPyHpIm
	2745) 5'W C A G G G T W-3'	${\tt PyPyImImImHp-\gamma-PyPyPyPyHpIm}$
	2746) 5'W C A G G G A W-3'	PyPyImImImPy-7-HpPyPyPyHpIm
	2747) 5'W C A G G C T W-3'	${\tt PyPyImImPyHp-\gamma-PyImPyPyHpIm}$
15	2748) 5'W C A G G C A W-3'	PyPyImImPyPy-7-HpImPyPyHpIm
	2749) 5'W C A G C T T W-3'	$PyPyImPyHpHp-\gamma-PyPyImPyHpIm$
	2750) 5'W C A G C T A W-3'	${\tt PyPyImPyHpPy-\gamma-HpPyImPyHpIm}$
	2751) 5'W C A G C T G W-3'	PyPyImPyHpIm-y-PyPyImPyHpIm
	2752) 5'W C A G C T C W-3	PyPyImPyHpPy-7-ImPyImPyHpIm
20	2753) 5'W C A G C A T W-3'	$PyPyImPyPyHp-\gamma-PyHpImPyHpIm$
	2754) 5'W C A G C A A W-3'	PyPyImPyPyPy-γ-HpHpImPyHpIm
	2755) 5'W C A G C A G W-3'	PyPyImPyPyIm-y-PyHpImPyHpIm
	2756) 5'W C A G C A C W-3'	PyPyImPyPyPy-γ-ImHpImPyHpIm
	2757) 5'W C A G C G T W-3'	РуРуІтРуІтРуГтРуРуІтРуНрІт
25	2758) 5'W C A G C G A W-3'	PyPyImPyImPy-γ-HpPyImPyHpIm
	2759) 5'W C A G C C T W-3'	PyPyImPyPyHp-γ-PyImImPyHpIm
	2760) 5'W C A G C C A W-3'	PyPyImPyPyPy-γ-HpImImPyHpIm
	2761) 5'W C A G G G W-3'	PyPyImImImIm-y-PyPyPyPyHpIm
	2762) 5'W C A G G G C W-3'	PyPyImImImPy-y-ImPyPyPyHpIm
30	2763) 5'W C A G G C G W-3'	PyPyImImPyIm-y-PyImPyPyHpIm
	2764) 5'W C A G G C C W-3'	РуРуІмІмРуРу-ү-ІмІмРуРуНрІм
	2765) 5'W C A G C G G W-3'	PyPyImPyImIm-y-PyPyImPyHpIm
	2766) 5'W C A G C G C W-3'	PyPyImPyImPy-7-ImPyImPyHpIm
	2767) 5'W C A G C C G W-3'	PyPyImPyPyIm-y-PyImImPyHpIm
35	2768) 5'W C A G C C C W-3'	PyPyImPyPyPy-y-ImImImPyHpIm

	T	ABLE 134: 12-ring Hairpin Polyamides for	recognition of 8-bp 5'-WCATWNNW-3'
		DNA sequence	aromatic amino acid sequence
	2769)	5'W C A T T T T W-3'	РуРуНрНрНр-ү-РуРуРуРуНрІm
5	2770)	.5'W C A T T T A W-3'	РуРуНрНрНрРу-ү-НрРуРуРуНрІm
	2771)	5'W C A T T T G W-3'	РуРуНрНрНрІт-ү-РуРуРуРуНрІт
	2772)	5'W C A T T T C W-3'	РуРуНрНрРу-ү-ІмРуРуРуНрІм
	2773)	5'W C A T T A T W-3'	РуРуНрНрРуНр-ү-РуНрРуРуНрІт
	2774)	5'W C A T T A A W-3'	РуРуНрНрРуРу-ү-НрНрРуРуНрІm
10	2775)	5'W C A T T A G W-3'	РуРуНрНрРуІт-ү-РуНрРуРуНрІт
	2776)	5'W C A T T A C W-3'	РуРуНрНрРуРу-ү-ІmНрРуРуНрІm
	2777)	5'W C A T T G T W-3'	· РуРуНрНрІmНр-ү-РуРуРуРуНрІm
	2778)	5'W C A T T G A W-3'	РуРуНрНрІmРу-ү-НрРуРуРуНрІm
	2779)	5'W C A T T G G W-3'	РуРуНрНрІшіш-ү-РуРуРуРуНрІш
15	2780)	5'W C A T T G C W-3'	РуРуНрНрІmРу-ү-ІmРуРуРуНрІm
	2781)	5'W C A T T C T W-3'	РуРуНрНрРуНр-ү-РуІmРуРуНрІm
	2782)	5'W C A T T C A W-3'	РуРуНрНрРуРу-ү-НрІмРуРуНрІм
	2783)	5'W C A T T C G W-3'	РуРуНрНрРуІт-ү-РуІтРуРуНрІт
	2784)	5'W C A T T C C W-3'	РуРуНрНрРуРу-ү-ІшІтРуРуНрІт
20	2785)	5'W C A T A T T W-3'	РуРуНрРуНрНр-ү-РуРуНрРуНрІm
	2786)	5'W C A T A T A W-3'	РуРуНрРуНрРу-ү-НрРуНрРуНрIm
	2787)	5'W C A T A T G W-3'	РуРуНрРуНрІш-ү-РуРуНрРуНрІш
	2788)	5'W C A T A T C W-3'	РуРуНрРуНрРу-ү-ІmРуНрРуНрІm
	2789)	5'W C A T A A T W-3'	РуРуНрРуРуНр-ү-РуНрНрРуНрІм
25	2790)	5'W C A T A A A W-3'	РуРуНрРуРуРу-ү-НрНрНрРуНрIm
	2791)	5'W C A T A A G W-3'	$PyPyHpPyPyIm-\gamma-PyHpHpPyHpIm$
	2792)	5'W C A T A A C W-3'	РуРуНрРуРуРу-ү-ImHpHpРуHpIm
	2793)	5'W C A T A G T W-3'	РуРуНрРуІmHp-ү-РуРуНpРуНpIm
	2794)	5'W C A T A G A W-3'	РуРуНрРуІmРу-ү-НрРуНрРуНрIm
30	2795)	5'W C A T A G G W-3'	РуРуНрРуІтіт-ү-РуРуНрРуНрІт
	2796)	5'W C A T A G C W-3'	РуРуНрРуІтРу-ү-ІтРуНрРуНрІт
	2797)	5'W C A T A C T W-3'	РуРуНрРуРуНр-ү-РуІмНрРуНрІм
	2798)	5'W C A T A C A W-3'	РуРуНрРуРуРу-ү-НрІмНрРуНрІм
	2799)	5'W C A T A C G W-3'	$PyPyHpPyPyIm-\gamma-PyImHpPyHpIm$
35	2800)	5'W C A T A C C W-3'	РуРуНрРуРуРу-ү-ІшІшНрРуНрІш

DNA sequence	olyamides for recognition of 8-bp 5'-WCATSNNW-3' aromatic amino acid sequence
2801) 5'W C A T G T T W-	A .
2802) 5'W C A T G T A W-	-1-1-1-Бтип-Бир-1-БАБАБАБАНБІШ
2803) 5'W C A T G T G W-	-1-1.05 mps. 1-ubs Abandum
2804) 5'W C A T G T C W-	-1-1-5-maxbrm-1-EAEAbAbAbTW
2805) 5'W C A T G A T W-	-1-1.15 rumbe A - A - rumb A b A b A b A b L L
2806) 5'W C A T G A A W-	-1-1-1-5-mr Auth-1-5AuthsAbAutum
2807) 5'W C A T G A G W-3	PyPyHpImPyPy-γ-HpHpPyPyHpIm
2808) 5'W C A T G A C W-3	-1-1
2809) 5'W C A T G G T W-3	-1-1
2810) 5'W C A T G G A W-3	-7-7-MILIMID-1-PYPYPYPIM
2811) 5'W C A T G C T W-3	-1-1-5-mrmt.k-l-HbbAbAbAbAbIm
2812) 5'W C A T G C A W-3	-1-1-1-Prum Aub-1-EAIUIDABAHDIM
2813) 5'W C A T G G G W-3	-1-1-Prum Ar A-1-ubrum Ab Aubrum
2814) 5'W C A T G G C W-3	-1-1PIMIMIM FYFYFYHDIM
2815) 5'W C A T G C G W-3	PyPyHpImImPy-γ-ImPyPyPyHpIm PyPyHpImPyJIm-γ-PyImPyPyHpIm
2816) 5'W C A T G C C W-3	PyPyHpImPyPy-γ-ImImPyPyHpIm
2817) 5'W C A T C T T W-3	РуРуНрРуНрНр-ү-РуРуІтРуНрІт
2818) 5'W C A T C T A W-3	1-1-P-1-P-P TYPYTHIPYTHIM
2819) 5'W C A T C T G W-3	PyPyHpPyHpIm-y-PyPyImPyHpIm
2820) 5'W C A T C T C W-3	PyPyHpPyHpPy-y-ImPyImPyHpIm
2821) 5'W C A T C A T W-3	РуРуНрРуРуНр-ү-РуНрІмРуНрІм
2822) 5'W C A T C A A W-3	РуРуНрРуРуРу-ү-НрНрІмРуНрІм
2823) 5'W C A T C A G W-3	PyPyHpPyPyIm-γ-PyHpImPyHpIm
2824) 5'W C A T C A C W-3	PyPyHpPyPyPy-γ-ImHpImPyHpIm
2825) 5'W C A T C G T W-3	РуРуНрРуІмНр-ү-РуРуІмРуНрІм
2826) 5'W C A T C G A W-3	PyPyHpPyImPy-γ-HpPyImPyHpIm
2827) 5'W C A T C C T W-3	PyPyHpPyPyHp-y-PyImImPyHpIm
2828) 5'W C A T C C A W-3	РуРуНрРуРуРу-ү-НрІшішРуНріш
2829) 5'W C A T C G G W-3	PyPyHpPyImIm-γ-PyPyImPyHpIm
2830) 5'W C A T C G C W-3	PyPyHpPyImPy-γ-ImPyImPyHpIm
2831) 5'W C A T C C G W-3	PyPyHpPyPyIm-γ-PyImImPyHpIm
2832) 5'W C A T C C C W-3	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -

_	TABLE 136: 12-ring Hairpin Polyamide	es for recognition of 8-bp 5'-WCAAWNNW-3'
=	DNA sequence	aromatic amino acid sequence
	2833) 5'W C A A T T T W-3'	РуРуРуНрНрНр-ү-РуРуРуНрНрІт
5	2834) 5'W C A A T T A W-3'	РуРуРуНрНрРу-ү-НрРуРуНрНрIm
	2835) 5'W C A A T T G W-3'	РуРуРуНрНрІт-ү-РуРуРуНрНрІт
	2836) 5'W C A A T T C W-3'	РуРуРуНрНрРу-ү-ІmРуРуНрНрІm
	2837) 5'W C A A T A T W-3'	РуРуРуНрРуНр-ү-РуНрРуНрНрIm
	2838) 5'W C A A T A A W-3'	РуРуРуНрРуРу-ү-НрНрРуНрНрIm
10	2839) 5'W C A A T A G W-3'	РуРуРуНрРуІт-ү-РуНрРуНрНрІт
	2840) 5'W C A A T A C W-3'	РуРуРуНрРуРу-ү-ІmНpРуНpНpІm
	2841) 5'W C A A T G T W-3'	РуРуРуНрІтНр-ү-РуРуРуНрНрІт
	2842) 5'W C A A T G A W-3'	РуРуРуНрІmРу-ү-НрРуРуНрНрІm
	2843) 5'W C A A T G G W-3'	РуРуРуНрІтіт-ү-РуРуРуНрНріт
15	2844) 5'W C A A T G C W-3'	РуРуРуНрІтРу-ү-ІтРуРуНрНрІт
	2845) 5'W C A A T C T W-3'	РуРуРуНрРуНр-ү-РуІмРуНрНрІм
	2846) 5'W C A A T C A W-3'	РуРуРуНрРуРу-ү-НрІmРуНрНрІm
	2847) 5'W C A A T C G W-3'	РуРуРуНрРуІт-ү-РуІтРуНрНрІт
	2848) 5'W C A A T C C W-3'	РуРуРуНрРуРу-ү-ІшІшРуНрНрІш
20	2849) 5'W C A A A T T W-3'	РуРуРуРуНрНр-ү-РуРуНрНрНрІм
	2850) 5'W C A A A T A W-3'	РуРуРуРуНрРу-ү-НрРуНрНрНрІм
	2851) 5'W C A A A T G W-3'	РуРуРуРуНрІт-ү-РуРуНрНрНрІт
	2852) 5'W C A A A T C W-3'	РуРуРуРуНрРу-ү-ІmРуНрНрНрІm
	2853) 5'W C A A A A T W-3'	РуРуРуРуРуНр-ү-РуНрНрНрНрІм
25	2854) 5'W C A A A A A W-3'	РуРуРуРуРуРу-ү-нрнрнрнрнріш
	2855) 5'W C A A A A G W-3'	^р уРуРуРуРуІm-ү-РуНрНрНрНрIm
	2856) 5'W C A A A A C W-3'	РуРуРуРуРуРу-ү-ІmНрНрНрНрIm
	2857) 5'W C A A A G T W-3'	PyPyPyPyImHp-y-PyPyHpHpHpIm
	2858) 5'W C A A A G A W-3'	РуРуРуРуІтРу-ү-НрРуНрНрНрІт
30	2859) 5'W C A A A G G W-3'	PyPyPyPyImIm-y-PyPyHpHpHpIm
	2860) 5'W C A A A G C W-3'	PyPyPyPyImPy-y-ImPyHpHpHpIm
	2861) 5'W C A A A C T W-3'	РуРуРуРуРуНр-ү-РуІмНрНрНрІм
	2862) 5'W C A A A C A W-3'	РуРуРуРуРуРу-ү-НрІтНрНрНрІт
	2863) 5'W C A A A C G W-3'	РуРуРуРуРуІт-ү-РуІтНрНрНрІт
35	2864) 5'W C A A A C C W-3'	РуРуРуРуРуРу-ү-ІтІтНрНрНрІт

_	T	ABLE 137: 12-ring Hairpin Polyamides for	
		DNA sequence	aromatic amino acid sequence
	2865)	5'W C A A G T T W-3'	РуРуРуІтНрНр-ү-РуРуРуНрНрІт
5	2866)	·5'W C A A G T A W-3'	РуРуРуІшНрРу-ү-НрРуРуНрНрІш
	2867)	5'W C A A G T G W-3'	РуРуРуІмНрім-ү-РуРуРуНрНрім
	2868)	5'W C A A G T C W-3'	РуРуРуІтНрРу-ү-ІтРуРуНрНрІт
	2869)	5'W C A A G A T W-3'	РуРуРуІтРуНр-ү-РуНрРуНрНрІт
	2870)	5'W C A A G A A W-3'	РуРуРуImРуРу-ү-НрНрРуНрНрIm
10	2871)	5'W C A A G A G W-3'	РуРуРуІтРуІт-ү-РуНрРуНрНрІт
	2872)	5'W C A A G A C W-3'	РуРуРуІтРуРу-ү-ІтНрРуНрНрІт
	2873)	5'W C A A G G T W-3'	РуРуРуІтПтнр-ү-РуРуРуНрНрІт
	2874)	5'W C A A G G A W-3'	РуРуРуImImРу-ү-НрРуРуНрНрIm
	2875)	5'W C A A G C T W-3'	РуРуРуІтРуНр-ү-РуІтРуНрНрІт
15	2876)	5'W C A A G C A W~3'	РуРуРуІmРуРу-ү-НрІmРуНрНрІm
	2877)	5'W C A A G G G W-3'	РуРуРуІшІшш-ү-РуРуРуНрНрІш
	2878)	5'W C A A G G C W-3'	РуРуРуІmImPy-ү-ImРуРуНрНрIm
	2879)	5'W C A A G C G W-3'	PyPyPyImPyIm-y-PyImPyHpHpIm
	2880)	5'W C A A G C C W-3'	РуРуРуImРуРу-ү-ImImРуНрНрIm
20	2881)	5'W C A A C T T W-3'	РуРуРуРуНрНр-ү-РуРуІтНрНрІт
	2882)	5'W C A A C T A W-3'	РуРуРуРуНрРу-ү-НрРуІтНрНрІт
	2883)	5'W C A A C T G W-3'	РуРуРуРуНрІм-ү-РуРуІмНрНрІм
	2884)	5'W C A A C T C W-3'	РуРуРуРуНрРу-ү-ІmРуІmНрНрІm
	2885)	5'W C A A C A T W-3'	РуРуРуРуРуНр-ү-РуНрІтНрНрІт
2 5	2886)	5'W C A A C A A W-3'	РуРуРуРуРу-ү-НрНрІтНрНрІт
	2887)	5'W C A A C A G W-3'	РуРуРуРуРуІм-ү-РуНрІмНрНрІм
	2888)	5'W C A A C A C W-3'	РуРуРуРуРуРу-ү-ІmНpІmНpНpІm
	2889)	5'W C A A C G T W-3'	РуРуРуРуІтнр-ү-РуРуІтнрнрІт
	2890)	5'W C A A C G A W-3'	РуРуРуРуImРу-ү-НрРуImНpHpIm
30	2891)	5'W C A A C C T W-3'	РуРуРуРуРуНр-ү-РуІтІт
	2892)	5'W C A A C C A W-3'	РуРуРуРуРу-ү-НрІmImHpHpIm
	2893)	5'W C A A C G G W-3'	PyPyPyPyImIm-y-PyPyImHpHpIm
	2894)	5'W C A A C G C W-3'	PyPyPyPyImPy-y-ImPyImHpHpIm
	2895)	5'W C A A C C G W-3'	PyPyPyPyPyIm-y-PyImImHpHpIm
35	2896)	5'W C A A C C C W-3'	PyPyPyPyPyPy-y-ImImImHpHpIm

_		For recognition of 8-bp 5'-WCACWNNW-3'
-	DNA sequence	aromatic amino acid sequence
	2897) 5'W C A C T T T W-3'	РуРуРуНрНрНр-ү-РуРуРуІмНрІм
5	2898) 5'W C A C T T A W-3'	РуРуРуНрНрРу-ү-НрРуРуІmНpIm
	2899) 5'W C A C T T G W-3'	РуРуРуНрНрІм-ү-РуРуРуІмНрІм
	2900) 5'W C A C T T C W-3'	РуРуРуНрНрРу-ү-ImРуРуImНpIm
	2901) 5'W C A C T A T W-3'	РуРуРуНрРуНр-ү-РуНрРуІтНрІт
	2902) 5'W C A C T A A W-3'	РуРуРуНрРуРу-ү-НрНрРуІтНрІт
10	2903) 5'W C A C T A G W-3'	PyPyPyHpPyIm-y-PyHpPyImHpIm
	2904) 5'W C A C T A C W-3'	РуРуРуНрРуРу-ү-ІmНpРуImНpІm
	2905) 5'W C A C T G T W-3'	РуРуРуНрІтНр-ү-РуРуРуІтНрІт
	2906) 5'W C A C T G A W-3'	РуРуРуНрІтРу-ү-НрРуРуІтНрІт
	2907) 5'W C A C T G G W-3'	РуРуРуНрІтіт-ү-РуРуРуІтНріт
15	2908) 5'W C A C T G C W-3'	РуРуРуНрІmРу-ү-ІmРуРуІmНрІm
	2909) 5'W C A C T C T W-3'	РуРуРуНрРуНр-ү-РуImРуImНpIm
	2910) 5'W C A C T C A W-3'	РуРуРуНрРуРу-ү-НрІтРуІтНрІт
	2911) 5'W C A C T C G W-3'	PyPyPyHpPyIm-γ-PyImPyImHpIm
	2912) 5'W C A C T C C W-3'	PyPyPyHpPyPy-γ-ImImPyImHpIm
20	2913) 5'W C A C A T T W-3'	РуРуРуРуНрНр-ү-РуРуНрІтНрІт
	2914) 5'W C A C A T A W-3'	РуРуРуРуНрРу-ү-НрРуНрІmНрІm
	2915) 5'W C A C A T G W-3'	РуРуРуРуНрІт-ү-РуРуНрІтНрІт
	2916) 5'W C A C A T C W-3'	РуРуРуРуНрРу-ү-ІmРуНрІmНрІm
	2917) 5'W C A C A A T W-3'	РуРуРуРуРуНр-ү-РуНрНрІмНрІм
25	2918) 5'W C A C A A A W-3'	РуРуРуРуРу-ү-НрНрНрImHpIm
	2919) 5'W C A C A A G W-3'	РуРуРуРуРуІм-ү-РуНрНрІмНрІм
	2920) 5'W C A C A A C W-3'	PyPyPyPyPy-γ-ImHpHpImHpIm
	2921) 5'W C A C A G T W-3'	$PyPyPyImHp-\gamma-PyPyHpImHpIm$
	2922) 5'W C A C A G A W-3'	РуРуРуРуІмРу-ү-НрРуНрІмНрІм
30	2923) 5'W C A C A G G W-3'	PyPyPyPyImIm-y-PyPyHpImHpIm
	2924) 5'W C A C A G C W-3'	PyPyPyPyImPy-y-ImPyHpImHpIm
	2925) 5'W C A C A C T W-3'	РуРуРуРуРуНр-ү-РуІтНрІтНрІт
	2926) 5'W C A C A C A W-3'	РуРуРуРуРуРу-ү-НрImHpImHpIm
	2927) 5'W C A C A C G W-3'	PyPyPyPyPyIm-y-PyImHpImHpIm
35	2928) 5'W C A C A C C W-3'	PyPyPyPyPyPy-y-ImImHpImHpIm

•	TABLE 139: 12-ring Hairpin Polyamides	for recognition of 8-bp 5'-WCACSNNW-3'
:	DNA sequence	aromatic amino acid sequence
	2929) 5'W C A C G T T W-3'	PyPyPyImHpHp-y-PyPyPyImHpIm
5	2930) 5'W C A C G T A W-3'	РуРуРуІтНрРу-ү-НрРуРуІтНрІт
	2931) 5'W C A C G T G W-3'	PyPyPyImHpIm-y-PyPyPyImHpIm
	2932) 5'W C A C G T C W-3'	PyPyPyImHpPy-y-ImPyPyImHpIm
	2933) 5'W C A C G A T W-3'	$PyPyPyImPyHp-\gamma-PyHpPyImHpIm$
	2934) 5'W C A C G A A W-3'	$PyPyPyImPyPy-\gamma-HpHpPyImHpIm$
10	2935) 5'W C A C G A G W-3'	PyPyPyImPyIm-y-PyHpPyImHpIm
	2936) 5'W C A C G A C W-3'	PyPyPyImPyPy-γ-ImHpPyImHpIm
	2937) 5'W C A C G G T W-3'	PyPyPyImImHp-y-PyPyPyImHpIm
	2938) 5'W C A C G G A W-3'	PyPyPyImImPy-γ-HpPyPyImHpIm
	2939) 5'W C A C G C T W-3'	PyPyPyImPyHp-y-PyImPyImHpIm
15	2940) 5'W C A C G C A W-3'	PyPyPyImPyPy-y-HpImPyImHpIm
	2941) 5'W C A C C T T W-3'	РуРуРуРуНрНр-ү-РуРуІтІПНрІт
	2942) 5'W C A C C T A W-3'	РуРуРуРуНрРу-ү-HpРyImImHpIm
	2943) 5'W C A C C T G W-3'	PyPyPyPyHpIm-y-PyPyImImHpIm
	2944) 5'W C A C C T C W-3'	PyPyPyPyHpPy-y-ImPyImImHpIm
20	2945) 5'W C A C C A T W-3'	PyPyPyPyPyHp-γ-PyHpImImHpIm
	2946) 5'W C A C C A A W-3'	PyPyPyPyPy-y-HpHpImImHpIm
	2947) 5'W C A C C A G W-3'	PyPyPyPyPyIm-y-PyHpImImHpIm
	2948) 5'W C A C C A C W-3'	PyPyPyPyPyPy-y-ImHpImImHpIm
	2949) 5'W C A C C G T W-3'	PyPyPyImHp-y-PyPyImImHpIm
25	2950) 5'W C A C C G A W-3'	PyPyPyImPy-7-HpPyImImHpIm
	2951) 5'W C A C C C T W-3'	[•] РуРуРуРуРуНр-ү-РуІmІmІmНрІm
	2952) 5'W C A C C C A W-3'	PyPyPyPyPyPy-7-HpImImImHpIm
	2953) 5'W C A C G G G W-3'	PyPyPyImImIm-y-PyPyPyImHpIm
	2954) 5'W C A C G G C W-3'	PyPyPyImImPy-7-ImPyPyImHpIm
30	2955) 5'W C A C G C G W-3'	PyPyPyImPyIm-γ-PyImPyImHpIm
	2956) 5'W C A C G C C W-3'	PyPyPyImPyPy-γ-ImImPyImHpIm
	2957) 5'W C A C C G G W-3'	PyPyPyPyImIm-γ-PyPyImImHpIm
	2958) 5'W C A C C G C W-3'	PyPyPyPyImPy-γ-ImPyImImHpIm
	2959) 5'W C A C C C G W-3'	PyPyPyPyPyIm-y-PyImImImHpIm
35	2960) 5'W C A C C C C W-3'	PyPyPyPyPyPy-γ-ImImImImHpIm

		g Hairpin Polyamides for r	ecognition of 8-bp 5'-WCTGWNNW-3'
	DNA sequence		aromatic amino acid sequence .
	2961) 5'W C T G	T T T W-3'	РуНрІтНрНрНр-ү-РуРуРуРуРуІт
5	2962) ·5'W C T G	T T A W-3'	РуНрІтНрНрРу-ү-НрРуРуРуРуІт
	2963) 5'W C T G	T T G W-3'	РуНрІmНрНріm-ү-РуРуРуРуРуіm
	2964) 5'W C T G	T T C W-3'	PyHpImHpHpPy-y-ImPyPyPyPyIm
	2965) 5'W C T G	T A T W-3'	РуНрІмНрРуНр-ү-РуНрРуРуРуІм
	2966) 5'W C T G	T A A W-3'	РуНрІmНpРуРу-ү-НpНpРуРуРуIm
10	2967) 5'W C T G	T A G W-3'	РуНрІтНрРуІт-ү-РуНрРуРуРуІт
	2968) 5'W C T G	T A C W-3'	РуНрІтНрРуРу-у-ІтНрРуРуРуІт
	2969) 5'W C T G	T G T W-3'	РуНрІмНрІмНр-ү-РуРуРуРуРуІм
	2970) 5'W C T G	T G A W-3'	РуНрІтНрітРу-ү-НрРуРуРуРуІт
	2971) 5'W C T G	T G G W-3'	PyHpImHpImIm-y-PyPyPyPyPyIm
15	2972) 5'W C T G	T G C W-3'	PyHpImHpImPy-y-ImPyPyPyPyIm
	2973) 5'W C T G	T C T W-3'	РуНрІтНрРуНр-ү-РуІтРуРуРуІт
	2974) 5'W C T G	T C A W-3'	РуНрІмНрРуРу-ү-НрІмРуРуРуІм
	2975) 5'W C T G	T C G W-3'	PyHpImHpPyIm-y-PyImPyPyPyIm
	2976) 5'W C T G	T C C W-3'	PyHpImHpPyPy-7-ImImPyPyPyIm
20	2977) 5'W C T G	A T T W-3'	РуНрІmРуНрНр-ү-РуРуНрРуРуІm
	2978) 5'W C T G	A T A W-3'	РуНрІмРуНрРу-ү-НрРуНрРуРуІм
	2979) 5'W C T G	A T G W-3'	РуНрІмРуНрІм-ү-РуРуНрРуРуІм
	2980) 5'W C T G	A T C W-3'	PyHpImPyHpPy-y-ImPyHpPyPyIm
	2981) 5'W C T G	A A T W-3'	РуНрІmРуРуНр-ү-РуНрНpРуРуIm
25	2982) 5'W C T G	A A A W-3'	РуНрІmРуРуРу-ү-НрНрНрРуРуІm
	2983) 5'W C T G	A A G W-3'	PyHpImPyPyIm-y-PyHpHpPyPyIm
	2984) 5'W C T G A	A A C W-3'	РуНрІmРуРуРу-ү-ImНpНpРуРуIm
	2985) 5'W C T G A	A G T W-3'	РуНрІтРуІтНр-ү-РуРуНрРуРуІт
	2986) 5'W C T G A	A G A W-3'	РуНрІmРуІmРу-ү-НрРуНрРуРуІm
30	2987) 5'W C T G I	A G G W-3'	PyHpImPyImIm-y-PyPyHpPyPyIm
	2988) 5'W C T G A	A G C W-3'	PyHpImPyImPy-y-ImPyHpPyPyIm
	2989) 5'W C T G A	A C T W-3'	РуНрІmРуРуНр-ү-РуІmНpРуРуІm
	2990) 5'W C T G 1	A C A W-3'	PyHpImPyPyPy-γ-HpImHpPyPyIm
	2991) 5'W C T G 1	A C G W-3'	PyHpImPyPyIm-γ-PyImHpPyPyIm
35	2992) 5'W C T G 1	A C C W-3	РуНрІmРуРуРу-ү-ІmІmНpРуРуІm

	TABLE 141: 12-ring Hairpin Polyamides	for recognition of 8-bp 5'-WCTGSNNW-3'
	DNA sequence	aromatic amino acid sequence
	2993) 5'W C T G G T T W-3'	РуНрІтітнрнр-ү-РуРуРуРуРуІт
5	2994) 5'W C T G G T A W-3'	РуНрІmІmНpРy-ү-НpРyРyРyРyIm
	2995) 5'W C T G G T G W-3'	РуНрІmІmНрІm-ү-РуРуРуРуРуIm
	2996) 5'W C T G G T C W-3'	РуНрІmІmНpРy-y-ImРyРyРyРyIm
	2997) 5'W C T G G A T W-3'	РуНрІшІшБуНр-ү-РуНрРуРуРуІш
	2998) 5'W C T G G A A W-3'	PyHpImImPyPy-γ-HpHpPyPyPyIm
10	2999) 5'W C T G G A G W-3'	PyHpImImPyIm-y-PyHpPyPyPyIm
	3000) 5'W C T G G A C W-3'	PyHpImImPyPy-y-ImHpPyPyPyIm
	3001) 5'W C T G G G T W-3'	PyHpImImImHp-7-PyPyPyPyPyIm
	3002) 5'W C T G G G A W-3'	PyHpImImImPy-7-HpPyPyPyPyIm
	3003) 5'W C T G G C T W-3'	PyHpImImPyHp-y-PyImPyPyPyIm
15	3004) 5'W C T G G C A W-3'	PyHpImImPyPy-y-HpImPyPyPyIm
	3005) 5'W C T G C T T W-3'	РуНрІmРуНрНр-ү-РуРуІmРуРуІm
	3006) 5'W C T G C T A W-3'	РуНрІmРуНрРу-ү-НрРуІmРуРуІm
	3007) 5'W C T G C T G W-3'	PyHpImPyHpIm-7-PyPyImPyPyIm
	3008) 5'W C T G C T C W-3'	PyHpImPyHpPy-7-ImPyImPyPyIm
20	3009) 5'W C T G C A T W-3'	PyHpImPyPyHp-7-PyHpImPyPyIm
	3010) 5'W C T G C A A W-3'	РуНрІmРуРуРу-ү-НрНрІmРуРуІm
	3011) 5'W C T G C A G W-3'	PyHpImPyPyIm-y-PyHpImPyPyIm
	3012) 5'W C T G C A C W-3'	PyHpImPyPyPy-7-ImHpImPyPyIm
	3013) 5'W C T G C G T W-3'	PyHpImPyImHp-7-PyPyImPyPyIm
25	3014) 5'W C T G C G A W-3'	PyHpImPyImPy-γ-HpPyImPyPyIm
	3015) 5'W C T G C C T W-3'	PyHpImPyPyHp-y-PyImImPyPyIm
	3016) 5'W C T G C C A W-3'	PyHpImPyPyPy-γ-HpImImPyPyIm
	3017) 5'W C T G G G W-3'	PyHpImImIm-y-PyPyPyPyPyIm
	3018) 5'W C T G G G C W-3'	PyHpImImImPy-y-ImPyPyPyPyIm
30	3019) 5'W C T G G C G W-3'	PyHpImImPyIm-y-PyImPyPyPyIm
	3020) 5'W C T G G C C W-3'	PyHpImImPyPy-y-ImImPyPyPyIm
	3021) 5'W C T G C G G W-3'	PyHpImPyImIm-y-PyPyImPyPyIm
	3022) 5'W C T G C G C W-3'	PyHpImPyImPy-γ-ImPyImPyPyIm
	3023) 5'W C T G C C G W-3'	PyHpImPyPyIm-y-PyImImPyPyIm
35	3024) 5'W C T G C C C W-3'	PyHpImPyPyPy-7-ImImImPyPyIm

_	TA	ABLE 142: 12-ring Hairpin Polyamides for r	
=		DNA sequence	aromatic amino acid sequence
	3025)	5'W C T T T T T W-3'	РуНрНрНрНр-ү-РуРуРуРуРуIm
	3026)	·5'W C T T T T A W-3'	РуНрНрНрРу-ү-НрРуРуРуРуIm
	3027)	5'W C T T T G W-3'	РуНрНрНрIm-ү-РуРуРуРуРуIm
	3028)	5'W C T T T C W-3'	Рунрнрнрру-ү-ІмРуРуРуРуІм
	3029)	5'W C T T T A T W-3'	РуНрНрРуНр-ү-РуНрРуРуРуIm
	3030)	5'W C T T T A A W-3'	РуНрНрРуРу-ү-НрНрРуРуРуIm
	3031)	5'W C T T T A G W-3'	РуНрНрНрРуIm-ү-РуНрРуРуРуIm
	3032)	5'W C T T T A C W-3'	РуНрНрРуРу-ү-ІтНрРуРуРуІт
	3033)	5'W C T T T G T W-3'	РуНрНрНрImHp-ү-РуРуРуРуРуIm
	3034)	5'W C T T T G A W-3'	РуНрНрНрІтРу-ү-НрРуРуРуРуІт
	3035)	5'W C T T T G G W-3'	РуНрНрНрішіш-ү-РуРуРуРуРуІш
	3036)	5'W C T T T G C W-3'	РуНрНрНрІтРу-ү-ІтРуРуРуРуІт
	3037)	5'W C T T T C T W-3'	РуНрНрРрРуНр-ү-РуІтРуРуРуІт
	3038)	5'W C T T T C A W-3'	РуНрНрРуРу-ү-НрІмРуРуРуІм
	3039)	5'W C T T T C G W-3'	РуНрНрРруім-ү-РуімРуРуРуім
	3040)	5'W C T T T C C W-3'	РуНрНрРуРу-ү-ІтІтРуРуРуІт
	3041)	5'W C T T A T T W-3'	РуНрНрРуНрНр-ү-РуРуНрРуРуІт
	3042)	5'W C T T A T A W-3'	РунрнрРунрРу-ү-нрРунрРуРуІм
	3043)	5'W C T T A T G W-3'	РуНрНрРуНрIm-ү-РуРуНрРуРуIm
	3044)	5'W C T T A T C W-3'	РуНрНрРуНрРу-ү-ІmРуНрРуРуІm
	3045)	5'W C T T A A T W-3'	РуНрНрРуРуНр-ү-РуНрНрРуРуІм
	3046)	5'W C T T A A A W-3'	РуНрНрРуРуРу-ү-НрНрНрРуРуІм
	3047)	5'W C T T A A G W-3'	·РуНрНрРуРуІm-ү-РуНрНрРуРуІm
	3048)	5'W C T T A A C W-3'	РуНрНрРуРуРу-ү-ІтНрНрРуРуІт
	3049)	5'W C T T A G T W-3'	РуНрНрРуІmНp-ү-РуРуНpРуРуІm
	3050)	5'W C T T A G A W-3'	РуНрНрРуІmРу-ү-НрРуНрРуРуІm
	3051)	5'W C T T A G G W-3'	РуНрНрРуІшІт-ү-РуРуНрРуРуІш
	3052)	5'W C T T A G C W-3'	РуНрНрРуІмРу-ү-ІмРуНрРуРуІм
	3053)	5'W C T T A C T W-3'	РуНрНрРуРуНр-ү-РуІтНрРуРуІт
	3054)	5'W C T T A C A W-3'	РуНрНрРуРуРу-ү-НрІтНрРуРуІт
	3055)	5'W C T T A C G W-3'	РуНрНрРуРуІт-ү-РуІтНрРуРуІт
	3056)	5'W C T T A C C W-3'	РуНрНрРуРуРу-ү-ІмІмНрРуРуІм

	TABLE 143: 12-ring Hairpin Polyamides f	for recognition of 8-bp 5'-WCTTSNNW-3'
	DNA sequence	aromatic amino acid sequence
	3057) 5'W C T T G T T W-3'	РуНрНрImHpHp-ү-РуРуРуРуРуIm
5	3058) 5'W C T T G T A W-3'	РуНрНрІмНрРу-ү-НрРуРуРуРуІм
	3059) 5'W C T T G T G W-3'	PyHpHpImHpIm-y-PyPyPyPyPyIm
	3060) 5'W C T T G T C W-3'	PyHpHpImHpPy-γ-ImPyPyPyPyIm
	3061) 5'W C T T G A T W-3'	РуНрНрІмРуНр-ү-РуНрРуРуРуІм
	3062) 5'W C T T G A A W-3'	РуНрНрImРуРу-ү-НрНрРуРуРуIm
10	3063) 5'W C T T G A G W-3'	РуНрНрImРуIm-ү-РуНрРуРуРуIm
	3064) 5'W C T T G A C W-3'	РуНрНрІmРуРу-ү-ImНpРуРуРуIm
	3065) 5'W C T T G G T W-3'	РуНрНрImImHp-ү-РуРуРуРуРуIm
	3066) 5'W C T T G G A W-3'	PyHpHpImImPy-γ-HpPyPyPyPyIm
	3067) 5'W C T T G C T W-3'	РуНрНрІmРуНр-ү-РуІmРуРуРуІm
15	3068) 5'W C T T G C A W-3'	PyHpHpImPyPy-γ-HpImPyPyPyIm
	3069) 5'W C T T G G G W-3'	PyHpHpImImIm-y-PyPyPyPyPyIm
	3070) 5'W C T T G G C W-3'	PyHpHpImImPy-7-ImPyPyPyPyIm
	3071) 5'W C T T G C G W-3'	PyHpHpImPyIm-y-PyImPyPyPyIm
	3072) 5'W C T T G C C W-3'	PyHpHpImPyPy-y-ImImPyPyPyIm
20	3073) 5'W C T T C T T W-3'	РунрНрРунрнр-ү-РуРуІтРуРуІт
	3074) 5'W C T T C T A W-3'	РуНрНрРуНрРу-ү-НрРуІтРуРуІт
	3075) 5'W C T T C T G W-3'	РуНрНрРуНрІт-ү-РуРуІтРуРуІт
	3076) 5'W C T T C T C W-3'	PyHpHpPyHpPy-y-ImPyImPyPyIm
	3077) 5'W C T T C A T W-3'	РуНрНрРуРуНр-ү-РуНрІтРуРуІт
25	3078) 5'W C T T C A A W-3'	РуНрНрРуРуРу-ү-НрНрІmРуРуІm
	3079) 5'W C T T C A G W-3'	[.] РуНрНрРуРуІm-ү-РуНрІmРуРуІm
	3080) 5'W C T T C A C W-3'	РуНрНрРуРуРу-ү-ІmНpImРуРуІm
	3081) 5'W C T T C G T W-3'	PyHpHpPyImHp-7-PyPyImPyPyIm
	3082) 5'W C T T C G A W-3'	РунрнрРуІтРу-ү-нрРуІтРуРуІт
30	3083) 5'W C T T C C T W-3'	РуНрНрРуРуНр-ү-РуІмІтРуРуІт
	3084) 5'W C T T C C A W-3'	РуНрНрРуРуРу-ү-НрІшПРуРуІш
	3085) 5'W C T T C G G W-3'	PyHpHpPyImIm-y-PyPyImPyPyIm
	3086) 5'W C T T C G C W-3'	PyHpHpPyImPy-7-ImPyImPyPyIm
	3087) 5'W C T T C C G W-3'	PyHpHpPyPyIm-y-PyImImPyPyIm
35	3088) 5'W C T T C C C W-3'	PyHpHpPyPyPy-γ-ImImImPyPyIm

	T.	ABLE 144: 12-ring Hairpin Polyamides for re	ecognition of 8-bp 5'-WCTAWNNW-3'.
		DNA sequence	aromatic amino acid sequence
	3089)	5'W C T A T T T W-3'	РуНрРуНрНрнр-ү-РуРуРуНрРуІм
5	3090)	5'W C T A T T A W-3'	РуНрРуНрНрРу-ү-НрРуРуНрРуIm
	3091)	5'W C T A T T G W-3'	РуНрРуНрНрІт-ү-РуРуРуНрРуІт
	3092)	5'W C T A T T C W-3'	РуНрРуНрНрРу-ү-ІmРуРуНрРуІm
	3093)	5'W C T A T A T W-3'	РунрРунрРунр-ү-РунрРунрРуім
	3094)	5'W C T A T A A W-3'	РуНрРуНрРуРу-ү-НрНрРуНрРуІм
10	3095)	5'W C T A T A G W-3'	РуНрРуНрРуIm-ү-РуНрРуНрРуIm
	3096)	5'W C T A T A C W-3'	РуНрРуНрРуРу-ү-ІmНрРуНрРуІm
	3097)	5'W C T A T G T W-3'	РуНрРуНрІтНр-ү-РуРуРуНрРуІт
	3098)	5'W C T A T G A W-3'	РуНрРуНрІтРу-ү-НрРуРуНрРуІт
	3099)	5'W C T A T G G W-3'	РуНрРуНрІшіш-ү-РуРуРуНрРуіш
15	3100)	5'W C T A T G C W-3'	РуНрРуНрІmРу-ү-ІmРуРуНрРуІm
	3101)	5'W C T A T C T W-3'	РунрРунрРунр-ү-РуімРунрРуім
	3102)	5'W C T A T C A W-3'	РуНрРуНрРуРу-ү-НрІмРуНрРуІм
	3103)	5'W C T A T C G W-3'	РуНрРуНрРуІт-ү-РуІтРуНрРуІт
	3104)	5'W C T A T C C W-3'	РуНрРуНрРуРу-ү-ІmІmРуНрРуІm
20	3105)	5'W C T A A T T W-3'	РуНрРуРуНрНр-ү-РуРуНрНрРуІт
	3106)	5'W C T A A T A W-3'	РуНрРуРуНрРу-ү-НрРуНрНрРуІт
	3107)	5'W C T A A T G W-3'	РуНрРуРуНрІм-ү-РуРуНрНрРуІм
	3108)	5'W C T A A T C W-3'	РуНрРуРуНрРу-ү-ІmРуНрНрРуІm
	3109)	5'W C T A A A T W-3'	РуНрРуРуРуНр-ү-РуНрНрНрРуІт
25	3110)	5'W C T A A A A W-3'	РуНрРуРуРуРу-ү-НрНрНрНрРуІт
	3111)	5'W C T A A A G W-3'	·РуНрРуРуРуIm-ү-РуНрНрНрРуIm
	3112)	5'W C T A A A C W-3'	РуНрРуРуРуРу-ү-ІmНpНpНpРyІm
	3113)	5'W C T A A G T W-3'	РуНрРуРуІтНр-ү-РуРуНрНрРуІт
	3114)	5'W C T A A G A W-3'	РуНрРуРуІмРу-ү-НрРуНрНрРуІм
30	3115)	5'W C T A A G G W-3'	РуНрРуРуІшш-ү-РуРуНрНрРуІш
	3116)	5'W C T A A G C W-3'	PyHpPyPyImPy-y-ImPyHpHpPyIm
		5'W C T A A C T W-3'	РуНрРуРуРуНр-ү-РуІтНрНрРуІт
	3118)	5'W C T A A C A W-3'	РуНрРуРуРуРу-ү-НрІтНрНрРуІт
	3119)	5'W C T A A C G W-3'	PyHpPyPyIm-γ-PyImHpHpPyIm
35	3120)	5'W C T A A C C W-3'	РуНрРуРуРу-ү-ІтІтНрНрРуІт

-	TABLE 145: 12-ring Hairpin Polyamides fo	r recognition of 8-bp 5'-WCTASNNW-3'
	DNA sequence	aromatic amino acid sequence
	3121) 5'W C T A G T T W-3'	РуНрРуІmНрНр-ү-РуРуРуНрРуІm
5	3122) ·5'W C T A G T A W-3'	РунрРуІmНрРу-ү-нрРуРуНрРуІm
	3123) 5'W C T A G T G W-3'	PyHpPyImHpIm-γ-PyPyPyHpPyIm
	3124) 5'W C T A G T C W-3'	РуНрРуІтНрРу-ү-ІтРуРуНрРуІт
	3125) 5'W C T A G A T W-3'	РуНрРуІмРуНр-ү-РуНрРуНрРуІм
	3126) 5'W C T A G A A W-3'	РуНрРуІтРуРу-ү-НрНрРуНрРуІт
10	3127) 5'W C T A G A G W-3'	РуНрРуІтРуІт-ү-РуНрРуНрРуІт
	3128) 5'W C T A G A C W-3'	РуНрРуІтРуРу-ү-ІтНрРуНрРуІт
	3129) 5'W C T A G G T W-3'	РуНрРуІmImHp-ү-РуРуРуНрРуІm
	3130) 5'W C T A G G A W-3'	РуНрРуІmImРу-ү-НрРуРуНрРуІm
	3131) 5'W C T A G C T W-3'	РуНрРуІтРуНр-ү-РуІтРуНрРуІт
15	3132) 5'W C T A G C A W-3'	PyHpPyImPyPy-γ-HpImPyHpPyIm
	3133) 5'W C T A G G G W-3'	PyHpPyImImIm-y-PyPyPyHpPyIm
	3134) 5'W C T A G G C W-3'	PyHpPyImImPy-γ-ImPyPyHpPyIm
	3135) 5'W C T A G C G W-3'	PyHpPyImPyIm-y-PyImPyHpPyIm
	3136) 5'W C T A G C C W-3'	PyHpPyImPyPy-y-ImImPyHpPyIm
20	3137) 5'W C T A C T T W-3'	РунрРуРунрнр-ү-РуРуІтнрРуІт
	3138) 5'W C T A C T A W-3'	РуНрРуРуНрРу-ү-НрРуІтНрРуІт
	3139) 5'W C T A C T G W-3'	РуНрРуРуНрІт-ү-РуРуІтНрРуІт
	3140) 5'W C T A C T C W-3'	РуНрРуРуНрРу-ү-ІmРуІmНрРуІm
	3141) 5'W C T A C A T W-3'	РуНрРуРуРуНр-ү-РуНрІтНРРуІт
25	3142) 5'W C T A C A A W-3'	РуНрРуРуРуРу-ү-НрНрІтНРРУІт
	3143) 5'W C T A C A G W-3'	PyHpPyPyPyIm-7-PyHpImHpPyIm
	3144) 5'W C T A C A C W-3'	РуНрРуРуРуРу-ү-ImHpImHpPyIm
	3145) 5'W C T A C G T W-3'	PyHpPyPyImHp-y-PyPyImHpPyIm
	3146) 5'W C T A C G A W-3'	PyHpPyPyImPy-7-HpPyImHpPyIm
30	3147) 5'W C T A C C T W-3'	РуНрРуРуРуНр-ү-РуІмІмНрРуІм
	3148) 5'W C T A C C A W-3'	РуНрРуРуРуРу-ү-НрImImHpРуIm
	3149) 5'W C T A C G G W-3'	PyHpPyPyImIm-y-PyPyImHpPyIm
	3150) 5'W C T A C G C W-3'	PyHpPyPyImPy-γ-ImPyImHpPyIm
	3151) 5'W C T A C C G W-3'	PyHpPyPyPyIm-γ-PyImImHpPyIm
35	3152) 5'W C T A C C C W-3'	РуНрРуРуРуРу-ү-ІтІтІтРРУІт

		ramides for recognition of 8-bp 5'-WCTCWNNW-3'
	DNA sequence	aromatic amino acid sequence
	3153) 5'W C T C T T T W-3	РунрРунрнрнр-ү-РуРуРуІтРуІт
5	3154) 5'W C T C T T A W-3	РунрРунрнрРу-ү-нрРуРуІтРуІт
	3155) 5'W C T C T T G W-3	PyHpPyHpHpIm-γ-PyPyPyImPyIm
	3156) 5'W C T C T T C W-3	РунрРунрнрРу-ү-ІmРуРуІmРуІm
	3157) 5'W C T C T A T W-3	РунрРунрРунр-ү-РунрРуітРуіт
	3158) 5'W C T C T A A W-3	РуНрРуНрРуРу-ү-НрНрРуІтРуІт
10	3159) 5'W C T C T A G W-3	PyHpPyHpPyIm-y-PyHpPyImPyIm
	3160) 5'W C T C T A C W-3	РунрРунрРуРу-ү-ІмнрРуІмРуІм
	3161) 5'W C T C T G T W-3	PyHpPyHpImHp-γ-PyPyPyImPyIm
	3162) 5'W C T C T G A W-3	PyHpPyHpImPy-7-HpPyPyImPyIm
	3163) 5'W C T C T G G W-3	PyHpPyHpImIm-γ-PyPyPyImPyIm
15	3164) 5'W C T C T G C W-3	PyHpPyHpImPy-γ-ImPyPyImPyIm
	3165) 5'W C T C T C T W-3	PyHpPyHpPyHp-y-PyImPyImPyIm
	3166) 5'W C T C T C A W-3	PyHpPyHpPyPy-γ-HpImPyImPyIm
	3167) 5'W C T C T C G W-3	PyHpPyHpPyIm-γ-PyImPyImPyIm
	3168) 5'W C T C T C C W-3	PyHpPyHpPyPy-γ-ImImPyImPyIm
20	3169) 5'W C T C A T T W-3	· .PyHpPyPyHpHp-γ-PyPyHpImPyIm
	3170) 5'W C T C A T A W-3	PyHpPyPyHpPy-γ-HpPyHpImPyIm
	3171) 5'W C T C A T G W-3	PyHpPyPyHpIm-γ-PyPyHpImPyIm
	3172) 5'W C T C A T C W-3	PyHpPyPyHpPy-γ-ImPyHpImPyIm
	3173) 5'W C T C A A T W-3	РуНрРуРуРуНр-ү-РуНрНрІтРУІт
25	3174) 5'W C T C A A A W-3	РунрРуРуРуРу-ү-нрнрнрІтРуІт
	3175) 5'W C T C A A G W-3	PyHpPyPyPyIm-y-PyHpHpImPyIm
	3176) 5'W C T C A A C W-3	PyHpPyPyPyPy-y-ImHpHpImPyIm
	3177) 5'W C'T C A G T W-3	PyHpPyPyImHp-γ-PyPyHpImPyIm
	3178) 5'W C T C A G A W-3	PyHpPyPyImPy-γ-HpPyHpImPyIm
30	3179) 5'W C T C A G G W-3	PyHpPyPyImIm-y-PyPyHpImPyIm
	3180) 5'W C T C A G C W-3	PyHpPyPyImPy-y-ImPyHpImPyIm
	3181) 5'W C T C A C T W-3	PyHpPyPyPyHp-y-PyImHpImPyIm
	3182) 5'W C T C A C A W-3	PyHpPyPyPyPy-y-HpImHpImPyIm
	3183) 5'W C T C A C G W-3	PyHpPyPyPyIm-7-PyImHpImPyIm
35	3184) 5'W C T C A C C W-3	PyHpPyPyPyPy-y-ImImHpImPyIm

-	TABLE 147: 12-ring Hairpin Polyamides	for recognition of 8-bp 5'-WCTCSNNW-3'
-	DNA sequence	aromatic amino acid sequence
	3185) 5'W C T C G T T W-3'	РуНрРуІmНpНp-ү-РуРуРуІmРуІm
5	3186) 5'W C T C G T A W-3'	РуНрРуІmНpРy-γ-HpРyРyImРyIm
	3187) 5'W C T C G T G W-3'	PyHpPyImHpIm-y-PyPyPyImPyIm
	3188) 5'W C T C G T C W-3'	PyHpPyImHpPy-y-ImPyPyImPyIm
	3189) 5'W C T C G A T W-3'	PyHpPyImPyHp-y-PyHpPyImPyIm
	3190) 5'W C T C G A A W-3'	PyHpPyImPyPy-y-HpHpPyImPyIm
10	3191) 5'W C T C G A G W-3'	PyHpPyImPyIm-y-PyHpPyImPyIm
	3192) 5'W C T C G A C W-3'	PyHpPyImPyPy-y-ImHpPyImPyIm
	3193) 5'W C T C G G T W-3'	PyHpPyImImHp-y-PyPyPyImPyIm
	3194) 5'W C T C G G A W-3'	PyHpPyImImPy-y-HpPyPyImPyIm
	3195) 5'W C T C G C T W-3'	PyHpPyImPyHp-y-PyImPyImPyIm
15	3196) 5'W C T C G C A W-3'	PyHpPyImPyPy-7-HpImPyImPyIm
	3197) 5'W C T C C T T W-3'	РуНрРуРуНрНр-ү-РуРуІтітРуІт
	3198) 5'W C T C C T A W-3'	РуНрРуРуНрРу-ү-НрРуІтШРуІт
	3199) 5'W C T C C T G W-3'	PyHpPyPyHpIm-y-PyPyImImPyIm
	3200) 5'W C T C C T C W-3'	РуНрРуРуНрРу-ү-ImРуImImРуIm
20	3201) 5'W C T C C A T W-3'	РуНрРуРуРуНр-ү-РуНрImImРуIm
	3202) 5'W C T C C A A W-3'	РуНрРуРуРуРу-ү-НрНрImImPyIm
	3203) 5'W C T C C A G W-3'	РуНрРуРуРуІт-ү-РуНрІтІтРуІт
	3204) 5'W C T C C A C W-3'	РуНрРуРуРуРу-ү-ImHpImImPyIm
	3205) 5'W C T C C G T W-3'	PyHpPyPyImHp-γ-PyPyImImPyIm
25	3206) 5'W C T C C G A W-3'	PyHpPyPyImPy-γ-HpPyImImPyIm
	3207) 5'W C T C C C T W-3'	`PyHpPyPyPyHp-γ-PyImImImPyIm
	3208) 5'W C T C C C A W-3'	РуНрРуРуРуРу-ү-HpImImImPyIm
	3209) 5'W C T C G G G W-3'	PyHpPyImImIm-y-PyPyPyImPyIm
	3210) 5'W C T C G G C W-3'	PyHpPyImImPy-γ-ImPyPyImPyIm
30	3211) 5'W C T C G C G W-3'	PyHpPyImPyIm-y-PyImPyImPyIm
	3212) 5'W C T C G C C W-3'	PyHpPyImPyPy-y-ImImPyImPyIm
	3213) 5'W C T C C G G W-3'	PyHpPyPyImIm-y-PyPyImImPyIm
	3214) 5'W C T C C G C W-3'	PyHpPyPyImPy-γ-ImPyImImPyIm
	3215) 5'W C T C C C G W-3'	PyHpPyPyPyIm-y-PyImImImPyIm
35	3216) 5'W C T C C C C W-3'	PyHpPyPyPyPy-γ-ImImImPyIm

	TABLE 148: 12-ring β-Hairpin Polyamides for DNA sequence	
		aromatic amino acid sequence
	1233β) 5'-W G G G T T T W-3'	$ImImIm-\beta-HpHp-\gamma-PyPy-\beta-PyPyPy$
5	1234β) 5'-W G G G T T A W-3'	$ImImIm-\beta-HpPy-\gamma-HpPy-\beta-PyPyPy$
	1235β) 5'-W G G G T T G W-3'	ImImIm-β-HpIm-γ-РуРу-β-РуРуРу
	1236β) 5'-W G G G T T C W-3'	${\tt ImImIm-}\beta{\tt -HpPy-}\gamma{\tt -ImPy-}\beta{\tt -PyPyPy}$
	1237β) 5'-W G G G T A T W-3'	$ImImIm-\beta-PyHp-\gamma-PyHp-\beta-PyPyPy$
	1238β) 5'-W G G G T A A W-3'	$ImImIm-\beta-PyPy-\gamma-HpHp-\beta-PyPyPy$
10	1239β) 5′-W G G G T A G W-3'	${\tt ImImIm-\beta-PyIm-\gamma-PyHp-\beta-PyPyPy}$
	1240β) 5'-W G G G T A C W-3'	${\tt ImImIm-\beta-PyPy-\gamma-ImHp-\beta-PyPyPy}$
	1241β) 5'-W G G G T G T W-3'	${\tt ImImIm-}\beta \hbox{-} {\tt ImHp-}\gamma \hbox{-} {\tt PyPy-}\beta \hbox{-} {\tt PyPyPy}$
	1242β) 5'-W G G G T G A W-3'	${\tt ImImIm-}\beta\hbox{-}{\tt ImPy-}\gamma\hbox{-}{\tt HpPy-}\beta\hbox{-}{\tt PyPyPy}$
	1243β) 5'-W G G G T G G W-3'	${\tt ImImIm-\beta-ImIm-\gamma-PyPy-\beta-PyPyPy}$
15	1244β) 5'-W G G G T G C W-3'	${\tt ImImIm-}\beta\hbox{-}{\tt ImPy-}\gamma\hbox{-}{\tt ImPy-}\beta\hbox{-}{\tt PyPyPy}$
	1245β) 5'-W G G G T C T W-3'	${\tt ImImIm-\beta-PyHp-\gamma-PyIm-\beta-PyPyPy}$
	1246β) 5'-W G G G T C A W-3'	${\tt ImImIm-}\beta\hbox{-}{\tt PyPy-}\gamma\hbox{-}{\tt HpIm-}\beta\hbox{-}{\tt PyPyPy}$
	1247β) 5'-W G G G T C G W-3'	${\tt ImImIm-\beta-PyIm-\gamma-PyIm-\beta-PyPyPy}$
	1248β) 5'-W G G G T C C W-3'	${\tt ImImIm-}\beta\hbox{-}{\tt PyPy-}\gamma\hbox{-}{\tt ImIm-}\beta\hbox{-}{\tt PyPyPy}$
20	1249β) 5'-W G G G A T T W-3'	${\tt ImImIm-}\beta{\tt -HpHp-}\gamma{\tt -PyPy-}\beta{\tt -PyPyPy}$
	1250β) 5'-W G G G A T A W-3'	${\tt ImImIm-}\beta{\tt -HpPy-}\gamma{\tt -HpPy-}\beta{\tt -PyPyPy}$
	1251β) 5'-W G G G A T G W-3'	${\tt ImImIm-}\beta\hbox{-}{\tt HpIm-}\gamma\hbox{-}{\tt PyPy-}\beta\hbox{-}{\tt PyPyPy}$
	1252β) 5'-W G G G A T C W-3'	${\tt ImImIm-}\beta{\tt -HpPy-}\gamma{\tt -ImPy-}\beta{\tt -PyPyPy}$
	1253β) 5′-W G G G A A T W-3'	${\tt ImImIm-}\beta\hbox{-}{\tt PyHp-}\gamma\hbox{-}{\tt PyHp-}\beta\hbox{-}{\tt PyPyPy}$
25	1254β) 5'-W G G G A A A W-3'	${\tt ImImIm-}\beta\hbox{-}{\tt PyPy-}\gamma\hbox{-}{\tt HpHp-}\beta\hbox{-}{\tt PyPyPy}$
	1255β) 5'-W G G G A A G W-3'	$\texttt{ImImIm-}\beta\texttt{-PyIm-}\gamma\texttt{-PyHp-}\beta\texttt{-PyPyPy}$
	1256β) 5′-W G G G A A C W-3'	${\tt ImImIm-}\beta\hbox{-}{\tt PyPy-}\gamma\hbox{-}{\tt ImHp-}\beta\hbox{-}{\tt PyPyPy}$
	1257β) 5'-W G G G A G T W-3'	${\tt ImImIm-}\beta\hbox{-}{\tt ImHp-}\gamma\hbox{-}{\tt PyPy-}\beta\hbox{-}{\tt PyPyPy}$
	1258β) 5'-W G G G A G A W-3'	${\tt ImImIm-}\beta{\tt -ImPy-}\gamma{\tt -HpPy-}\beta{\tt -PyPyPy}$
30	1259β) 5′-W G G G A G G W-3'	${\tt ImImIm-\beta-ImIm-\gamma-PyPy-\beta-PyPyPy}$
	1260β) 5'-W G G G A G C W-3'	ImImIm-β-ImPy-γ-ImPy-β-PyPyPy
	1261β) 5'-W G G G A C T W-3'	ІтІтт-β-РуНр-ү-РуІт-β-РуРуРу
	1262β) 5'-W G G G A C A W-3'	$ImImIm-eta-PyPy-\gamma-HpIm-eta-PyPyPy$
	1263β) 5'-W G G G A C G W-3'	ImImIm-β-PyIm-γ-PyIm-β-PyPyPy
35	1264β) 5'-W G G G A C C W-3'	ImImIm-β-PyPy-γ-ImIm-β-PyPyPy

	TABL	E 149: 12-ring β-Hairpin Polyamides for	recognition of 8-bp 5'-WGGGSNNW-3'
	D	NA sequence	aromatic amino acid sequence
	1265 β)	5'-W G G G G T T W-3'	${\tt ImImImIm-}\beta{\tt -Hp-}\gamma{\tt -Py-}\beta{\tt -PyPyPyPy}$
5	1266 β)	5'-W G G G G T A W-3'	${\tt ImImImIm-}\beta\hbox{-}{\tt Py-}\gamma\hbox{-}{\tt Hp-}\beta\hbox{-}{\tt PyPyPyPy}$
	1267 β)	5'-W G G G G T G W-3'	${\tt ImImImIm-}\beta\hbox{-}{\tt Im-}\gamma\hbox{-}{\tt Py-}\beta\hbox{-}{\tt PyPyPyPy}$
	1268 β)	5'-W G G G G T C W-3'	${\tt ImImImIm-}\beta\hbox{-}{\tt Py-}\gamma\hbox{-}{\tt Im-}\beta\hbox{-}{\tt PyPyPyPy}$
	1269 β)	5'-W G G G G A T W-3'	${\tt ImImImIm-}\beta{\tt -Hp-}\gamma{\tt -Py-}\beta{\tt -PyPyPyPy}$
	1270 β)	5'-W G G G G A A W-3'	${\tt ImImImIm-}\beta\hbox{-}{\tt Py-}\gamma\hbox{-}{\tt Hp-}\beta\hbox{-}{\tt PyPyPyPy}$
10	1271 β)	5'-W G G G G A G W-3'	${\tt ImImImIm-}\beta{\tt -Im-}\gamma{\tt -Py-}\beta{\tt -PyPyPyPy}$
	1272 β)	5'-W G G G G A C W-3'	${\tt ImImImIm-}\beta \hbox{-} {\tt Py-}\gamma \hbox{-} {\tt Im-}\beta \hbox{-} {\tt PyPyPyPy}$
	1275 β)	5'-W G G G G C T W-3'	${\tt ImImImIm-}\beta{\tt -Hp-}\gamma{\tt -PyImPy-}\beta{\tt -PyPy}$
	1276 β)	5'-W G G G G C A W-3'	${\tt ImImImIm-}\beta\hbox{-}{\tt Py-}\gamma\hbox{-}{\tt HpImPy-}\beta\hbox{-}{\tt PyPy}$
	1277 β)	5'-W G G G C T T W-3'	${\tt ImImIm-\beta-HpHp-\gamma-PyPyIm-\beta-PyPy}$
15	1278 β)	5'-W G G G C T A W-3'	${\tt ImImIm-\beta-HpPy-\gamma-HpPyIm-\beta-PyPy}$
	1279 β)	5'-W G G G C T G W-3'	${\tt ImImIm-\beta-HpIm-\gamma-PyPyIm-\beta-PyPy}$
	1280 β)	5'-W G G G C T C W-3'	${\tt ImImIm-}\beta{\tt -HpPy-}\gamma{\tt -ImPyIm-}\beta{\tt -PyPy}$
	1281 β)	5'-W G G G C A T W-3'	${\tt ImImIm-\beta-PyHp-\gamma-PyHpIm-\beta-PyPy}$
	1282 β)	5'-W G G G C A A W-3'	${\tt ImImIm-\beta-PyPy-\gamma-HpHpIm-\beta-PyPy}$
20	1283 β)	5'-W G G G C A G W-3'	${\tt ImImIm-\beta-PyIm-\gamma-PyHpIm-\beta-PyPy}.$
	1284 β)	5'-W G G G C A C W-3'	${\tt ImImIm-\beta-PyPy-\gamma-ImHpIm-\beta-PyPy}$
	1285 β)	5'-W G G G C G T W-3'	${\tt ImImIm-}\beta\hbox{-}{\tt ImHp-}\gamma\hbox{-}{\tt PyPyIm-}\beta\hbox{-}{\tt PyPy}$
	1286 β)	5'-W G G G C G A W-3'	${\tt ImImIm-}\beta\hbox{-}{\tt ImPy-}\gamma\hbox{-}{\tt HpPyIm-}\beta\hbox{-}{\tt PyPy}$
	1287 β)	5'-W G G G C C T W-3'	${\tt ImImIm-\beta-PyHp-\gamma-PyImIm-\beta-PyPy}$
25	1288 β)	5'-W G G G C C A W-3'	${\tt ImImIm-\beta-PyPy-\gamma-HpImIm-\beta-PyPy}$
	G52 β)	5'-W G G G G C C W-3'	$\verb `ImImImIm-$\beta$-$Py-γ-$ImImPy-$\beta$-$PyPy$
	G53 β)	5'-W G G G C G G W-3'	${\tt ImImIm-}\beta\hbox{-}{\tt ImIm-}\gamma\hbox{-}{\tt PyPyIm-}\beta\hbox{-}{\tt PyPy}$
	G54 β)	5'-W G G G C G C W-3'	${\tt ImImIm-}\beta \hbox{-} {\tt ImPy-}\gamma \hbox{-} {\tt ImPyIm-}\beta \hbox{-} {\tt PyPy}$
	G55 β)	5'-W G G G C C G W-3'	${\tt ImImIm-\beta-PyIm-\gamma-PyImIm-\beta-PyPy}$
30	G56 β)	5'-W G G G C C C W-3'	${\tt ImImIm-\beta-PyPy-\gamma-ImImIm-\beta-PyPy}$

_			r recognition of 8-bp 5'-WGGTWNNW-3'
_		DNA sequence	aromatic amino acid sequence
	1289 β)	5'-W G G T T T T W-3'	${\tt ImIm-\beta-HpHpHp-\gamma-PyPyPy-\beta-PyPy}$
	1290β)	5'-W G G T T T A W-3'	${\tt ImIm-}\beta\hbox{-}{\tt HpHpPy-}\gamma\hbox{-}{\tt HpPyPy-}\beta\hbox{-}{\tt PyPy}$
5	1291β)	·5'-W G G T T T G W-3'	${\tt ImIm-}\beta{\tt -HpHpIm-}\gamma{\tt -PyPyPy-}\beta{\tt -PyPy}$
	1292β)	5'-W G G T T T C W-3'	${\tt ImIm-\beta-HpHpPy-\gamma-ImPyPy-\beta-PyPy}$
	1293β)	5'-W G G T T A T W-3'	Ішіш-β-НрРуНр-ү-РуНрРу-β-РуРу
	1294β)	5'-W G G T T A A W-3'	Ітіт-β-нрРуРу-ү-нрнрРу-β-РуРу
	1295 β)	5'-W G G T T A G W-3'	${\tt ImIm-}\beta{\tt -HpPyIm-}\gamma{\tt -PyHpPy-}\beta{\tt -PyPy}$
10	1296β)	5'-W G G T T A C W-3'	${\tt ImIm-}\beta{\tt -HpPyPy-}\gamma{\tt -ImHpPy-}\beta{\tt -PyPy}$
	1297β)	5'-W G G T T G T W-3'	${\tt ImIm-\beta-HpImHp-\gamma-PyPyPy-\beta-PyPy}$
	1298β)	5'-W G G T T G A W-3'	${\tt ImIm-\beta-HpImPy-\gamma-HpPyPy-\beta-PyPy}$
	1299β)	5'-W G G T T G G W-3'	${\tt ImIm-}\beta{\tt -HpImIm-}\gamma{\tt -PyPyPy-}\beta{\tt -PyPy}$
	1300β)	5'-W G G T T G C W-3'	${\tt ImIm-\beta-HpImPy-\gamma-ImPyPy-\beta-PyPy}$
15	1301β)	5'-W G G T T C T W-3'	${\tt ImIm-\beta-HpPyHp-\gamma-PyImPy-\beta-PyPy}$
	1302β)	5'-W G G T T C A W-3'	${\tt ImIm-\beta-HpPyPy-\gamma-HpImPy-\beta-PyPy}$
	1303β)	5'-W G G T T C G W-3'	${\tt ImIm-\beta-HpPyIm-\gamma-PyImPy-\beta-PyPy}$
	1304β)	5'-W G G T T C C W-3'	${\tt ImIm-\beta-HpPyPy-\gamma-ImImPy-\beta-PyPy}$
	1305β)	5'-W G G T A T T W-3'	${\tt ImIm}$ - ${\tt \beta}$ - ${\tt PyHpHp}$ - ${\tt \gamma}$ - ${\tt PyPyHp}$ - ${\tt \beta}$ - ${\tt PyPy}$
20	1306β)	5'-W G G T A T A W-3'	${\tt ImIm-}\beta{\tt PyHpPy-}\gamma{\tt HpPyHp-}\beta{\tt PyPy}$
	1307β)	5'-W G G T A T G W-3'	${\tt ImIm-\beta-PyHpIm-\gamma-PyPyHp-\beta-PyPy}$
	1308β)	5'-W G G T A T C W-3'	${\tt ImIm-\beta-PyHpPy-\gamma-ImPyHp-\beta-PyPy}$
	1309β)	5'-W G G T A A T W-3'	${\tt ImIm-\beta-PyPyHp-\gamma-PyHpHp-\beta-PyPy}$
	1310β)	5'-W G G T A A A W-3'	${\tt ImIm-\beta-PyPyPy-\gamma-HpHpHp-\beta-PyPy}$
25	1311β)	5'-W G G T A A G W-3'	${\tt ImIm-\beta-PyPyIm-\gamma-PyHpHp-\beta-PyPy}$
	1312β)	5'-W G G T A A C W-3'	$\verb `ImIm-$\beta-$PyPyPy-$\gamma-$ImHpHp-$\beta-$PyPy $
	1313β)	5'-W G G T A G T W-3'	${\tt ImIm-\beta-PyImHp-\gamma-PyPyHp-\beta-PyPy}$
	1314β)	5'-W G G T A G A W-3'	${\tt ImIm-\beta-PyImPy-\gamma-HpPyHp-\beta-PyPy}$
	1315β)	5'-W G G T A G G W-3'	${\tt ImIm-\beta-PyImIm-\gamma-PyPyHp-\beta-PyPy}$
30	1316β)	5'-W G G T A G C W-3'	${\tt ImIm} \dot{\vdash} \beta - {\tt PyImPy} - \gamma - {\tt ImPyHp} - \beta - {\tt PyPy}$
	1317β)	5'-W G G T A C T W-3'	${\tt ImIm-\beta-PyPyHp-\gamma-PyImHp-\beta-PyPy}$
	1318β)	5'-W G G T A C A W-3'	${\tt ImIm-\beta-PyPyPy-\gamma-HpImHp-\beta-PyPy}$
	1319β)	5'-W G G T A C G W-3'	${\tt ImIm-\beta-PyPyIm-\gamma-PyImHp-\beta-PyPy}$
	1320β)	5'-W G G T A C C W-3'	${\tt ImIm-\beta-PyPyPy-\gamma-ImImHp-\beta-PyPy}$

 TABLE 151: 12-ring β-Hairpin Polyamides f DNA sequence	or recognition of 8-bp 5'-WGGTSNNW-3' aromatic amino acid sequence
1321β) 5'-W G G T G T T W-3'	ImIm-β-ImHpHp-γ-PyPyPy-β-PyPy
1322β) 5'-W G G T G T A W-3'	ImIm-β-ImHpPy-γ-HpPyPy-β-PyPy
1323β) 5'-W G G T G T G W-3'	ImIm-β-ImHpIm-γ-PyPyPy-β-PyPy
1324β) 5'-W G G T G T C W-3'	ImIm-β-ImHpPy-γ-ImPyPy-β-PyPy
1325β) 5'-W G G T G A T W-3'	ImIm-β-ImРуНр-γ-РуНрРу-β-РуРу
1326β) 5'-W G G T G A A W-3'	ImIm-β-ImРуРу-γ-НрНрРу-β-РуРу
1327β) 5'-W G G T G A G W-3'	ImIm-β-ImPyIm-γ-PyHpPy-β-PyPy
1328β) 5'-W G G T G A C W-3'	ImIm-β-ImPyPy-γ-ImHpPy-β-PyPy
1329β) 5'-W G G T G G T W-3'	$ImIm-\beta-ImImHp-\gamma-PyPyPy-\beta-PyPy$
1330β) 5'-W G G T G G A W-3'	ImIm-β-ImImPy-γ-HpPyPy-β-PyPy
1331β) 5'-W G G T G C T W-3'	${\tt ImIm-\beta-ImPyHp-\gamma-PyImPy-\beta-PyPy}$
1332β) 5'-W G G T G C A W-3'	${\tt ImIm-\beta-ImPyPy-\gamma-HpImPy-\beta-PyPy}$
1333β) 5'-W G G T G G G W-3'	ImIm-β-ImImIm-γ-РуРуРу-β-РуРу
1334 β) 5'-W G G T G G C W-3'	ImIm-β-ImImPy-γ-ImPyPy-β-PyPy
1335β) 5'-W G G T G C G W-3'	ImIm-β-ImPyIm-γ-PyImPy-β-PyPy
1336β) 5'-W G G T G C C W-3'	ImIm-β-ImPyPy-γ-ImImPy-β-PyPy
1337β) 5'-W G G T C T T W-3'	${\tt ImIm-\beta-PyHpHp-\gamma-PyPyIm-\beta-PyPy}$
1338β) 5'-W G G T C T A W-3'	${\tt ImIm-\beta-PyHpPy-\gamma-HpPyIm-\beta-PyPy}$
1339β) 5'-W G G T C T G W-3'	${\tt ImIm-\beta-PyHpIm-\gamma-PyPyIm-\beta-PyPy}$
1340β) 5'-W G G T C T C W-3'	${\tt ImIm-\beta-PyHpPy-\gamma-ImPyIm-\beta-PyPy}$
1341β) 5'-W G G T C A T W-3'	${\tt ImIm-\beta-PyPyHp-\gamma-PyHpIm-\beta-PyPy}$
1342β) 5'-W G G T C A A W-3'	${\tt ImIm-}\beta\hbox{-}{\tt PyPyPy-}\gamma\hbox{-}{\tt HpHpIm-}\beta\hbox{-}{\tt PyPy}$
1343β) 5'-W G G T C A G W-3'	$\texttt{ImIm-}\beta\texttt{-PyPyIm-}\gamma\texttt{-PyHpIm-}\beta\texttt{-PyPy}$
1344β) 5'-W G G T C A C W-3'	${\tt ImIm-}\beta{\tt -PyPyPy-}\gamma{\tt -ImHpIm-}\beta{\tt -PyPy}$
1345β) 5'-W G G T C G T W-3'	${\tt ImIm-\beta-PyImHp-\gamma-PyPyIm-\beta-PyPy}$
1346β) 5'-W G G T C G A W-3'	${\tt ImIm-\beta-PyImPy-\gamma-HpPyIm-\beta-PyPy}$
1347β) 5'-W G G T C C T W-3'	${\tt ImIm-\beta-PyPyHp-\gamma-PyImIm-\beta-PyPy}$
1348β) 5'-W G G T C C A W-3'	${\tt ImIm-\beta-PyPyPy-\gamma-HpImIm-\beta-PyPy}$
1349β) 5'-W G G T C G G W-3'	${\tt ImIm-\beta-PyImIm-\gamma-PyPyIm-\beta-PyPy}$
1350β) 5'-W G G T C G C W-3'	${\tt ImIm-\beta-PyImPy-\gamma-ImPyIm-\beta-PyPy}$
1351β) 5'-W G G T C C G W-3'	${\tt ImIm-\beta-PyPyIm-\gamma-PyImIm-\beta-PyPy}$
1352β) 5'-W G G T C C C W-3'	ImIm-β-PyPyPy-γ-ImImIm-β-PyPy

	TABLE 152: 12-ring β-Hairpin Polyamides for	recognition of 8-bp 5'-WGGAWNNW-3'
	DNA sequence	aromatic amino acid sequence
	1353β) 5'-W G G A T T T W-3'	${\tt ImIm-\beta-HpHpHp-\gamma-PyPyPy-\beta-PyPy}$
5	1354β) 5'-W G G A T T A W-3'	Ішіш-8-нъньь-й-нъвь
	1355β) 5'-W G G A T T G W-3'	${\tt ImIm-\beta-HpHpIm-\gamma-PyPyPy-\beta-PyPy}$
	1356β) 5'-W G G A T T C W-3'	${\tt ImIm-\beta-HpHpPy-\gamma-ImPyPy-\beta-PyPy}$
	1357β) 5'-W G G A T A T W-3'	${\tt ImIm-}\beta\hbox{-}{\tt HpPyHp-}\gamma\hbox{-}{\tt PyHpPy-}\beta\hbox{-}{\tt PyPy}$
	1358β) 5'-W G G A T A A W-3'	Ішіш-8-нъъруру-4-нънър-3-вуру
10	1359β) 5'-W G G A T A G W-3'	${\tt ImIm-\beta-HpPyIm-\gamma-PyHpPy-\beta-PyPy}$
	1360β) 5'-W G G A T A C W-3'	${\tt ImIm-\beta-HpPyPy-\gamma-ImHpPy-\beta-PyPy}$
	1361β) 5'-W G G A T G T W-3'	${\tt ImIm-\beta-HpImHp-\gamma-PyPyPy-\beta-PyPy}$
	1362β) 5'-W G G A T G A W-3'	${\tt ImIm-\beta-HpImPy-\gamma-HpPyPy-\beta-PyPy}$
	1363β) 5'-W G G A T G G W-3'	${\tt ImIm-\beta-HpImIm-\gamma-PyPyPy-\beta-PyPy}$
15	1364β) 5'-W G G A T G C W-3'	${\tt ImIm-\beta-HpImPy-\gamma-ImPyPy-\beta-PyPy}$
	1365β) 5'-W G G A T C T W-3'	${\tt ImIm-\beta-HpPyHp-\gamma-PyImPy-\beta-PyPy}$
	1366β) 5'-W G G A T C A W-3'	${\tt ImIm-\beta-HpPyPy-\gamma-HpImPy-\beta-PyPy}$
	1367β) 5'-W G G A T C G W-3'	ImIm-β-HpPyIm-γ-PyImPy-β-PyPy
	1368β) 5'-W G G A T C C W-3'	${\tt ImIm-\beta-HpPyPy-\gamma-ImImPy-\beta-PyPy}$
20	1369β) 5'-W G G A A T T W-3'	${\tt ImIm-\beta-PyHpHp-\gamma-PyPyHp-\beta-PyPy}$
	1370β) 5'-W G G A A T A W-3'	${\tt ImIm-}\beta\hbox{-}{\tt PyHpPy-}\gamma\hbox{-}{\tt HpPyHp-}\beta\hbox{-}{\tt PyPy}$
	1371β) 5'-W G G A A T G W-3'	${\tt ImIm-\beta-PyHpIm-\gamma-PyPyHp-\beta-PyPy}$
	1372β) 5'-W G G A A T C W-3'	${\tt ImIm-\beta-PyHpPy-\gamma-ImPyHp-\beta-PyPy}$
	1373β) 5′-W G G A A A T W-3'	${\tt ImIm-\beta-PyPyHp-\gamma-PyHpHp-\beta-PyPy}$
25	1374β) 5'-W G G A A A A W-3'	${\tt ImIm-\beta-PyPyPy-\gamma-HpHpHp-\beta-PyPy}$
	1375β) 5'-W G G A A A G W-3'	${\tt ImIm-\beta-PyPyIm-\gamma-PyHpHp-\beta-PyPy}$
	1376β) 5'-W G G A A A C W-3'	${\tt ImIm-\beta-PyPyPy-\gamma-ImHpHp-\beta-PyPy}$
	1377β) 5'-W G G A A G T W-3'	${\tt ImIm-\beta-PyImHp-\gamma-PyPyHp-\beta-PyPy}$
	1378β) 5'-W G G A A G A W-3'	${\tt ImIm-\beta-PyImPy-\gamma-HpPyHp-\beta-PyPy}$
30	1379β) 5'-W G G A A G G W-3'	${\tt ImIm-\beta-PyImIm-\gamma-PyPyHp-\beta-PyPy}$
	1380β) 5'-W G G A A G C W-3'	${\tt ImIm-\beta-PyImPy-\gamma-ImPyHp-\beta-PyPy}$
	1381β) 5'-W G G A A C T W-3'	${\tt ImIm-\beta-PyPyHp-\gamma-PyImHp-\beta-PyPy}$
	1382β) 5'-W G G A A C A W-3'	${\tt ImIm-\beta-PyPyPy-\gamma-HpImHp-\beta-PyPy}$
	1383β) 5'-W G G A A C G W-3'	${\tt ImIm-\beta-PyPyIm-\gamma-PyImHp-\beta-PyPy}$
35	1384β) 5'-W G G A A C C W-3'	${\tt ImIm-}\beta \hbox{-} {\tt PyPyPy-}\gamma \hbox{-} {\tt ImImHp-}\beta \hbox{-} {\tt PyPy}$

1385β) 5'-W G G A G T T W-3' ImIm-β-ImHpHp-γ-PyPyPy-β-PyPy 1386β) ·5'-W G G A G T A W-3' ImIm-β-ImHpPy-γ-HpPyPy-β-PyPy 1387β) 5'-W G G A G T G W-3' ImIm-β-ImHpIm-γ-PyPyPy-β-PyPy 1388β) 5'-W G G A G T C W-3' ImIm-β-ImHpPy-γ-ImPyPy-β-PyPy 1389β) 5'-W G G A G A T W-3' ImIm-β-ImPyHp-γ-PyHpPy-β-PyPy 1390β) 5'-W G G A G A A W-3' ImIm-β-ImPyPy-γ-HpHpPy-β-PyPy		TABLE 153: 12-ring β-Hairpin Polyamides for	or recognition of 8-bp 5'-WGGASNNW-3'
1386β) · 5' - W G G A G T A W-3'		DNA sequence	aromatic amino acid sequence
1387β) 5'-W G G A G T G W-3' ImIm-β-ImHpIm-γ-PyPyPy-β-PyPy 1388β) 5'-W G G A G A C W-3' ImIm-β-ImHpPy-γ-ImPyPy-β-PyPy 1389β) 5'-W G G A G A T W-3' ImIm-β-ImPyPy-γ-PyPyPy-β-PyPy 1390β) 5'-W G G A G A G W-3' ImIm-β-ImPyPy-γ-PyPyPy-β-PyPy 1391β) 5'-W G G A G A G W-3' ImIm-β-ImPyPy-γ-PyPyPy-β-PyPy 1392β) 5'-W G G A G A C W-3' ImIm-β-ImPyPy-γ-PyPyPy-β-PyPy 1393β) 5'-W G G A G G T W-3' ImIm-β-ImImPy-γ-PyPyPy-β-PyPy 1394β) 5'-W G G A G G T W-3' ImIm-β-ImImPy-γ-PyPyPy-β-PyPy 1395β) 5'-W G G A G C T W-3' ImIm-β-ImImPy-γ-PyPyPy-β-PyPy 1396β) 5'-W G G A G C T W-3' ImIm-β-ImImPy-γ-PyPyPy-β-PyPy 1397β) 5'-W G G A G C G W-3' ImIm-β-ImImPy-γ-PyPyPy-β-PyPy 1398β) 5'-W G G A G C G W-3' ImIm-β-ImPyPy-γ-PyPyPy-β-PyPy 1400β) 5'-W G G A G C G W-3' ImIm-β-ImPyPy-γ-PyPyPy-β-PyPy 1401β) 5'-W G G A C T T W-3' ImIm-β-ImPyPy-γ-PyPyIm-β-PyPy 1402β) 5'-W G G A C T G W-3' ImIm-β-PyPpy-γ-PyPyIm-β-PyPy 1403β) 5'-W G G A C T G W-3' ImIm-β-PyPpy-γ-PyPyIm-β-PyPy 1405β) 5'-W G G A C T G W-3' ImIm-β-PyPpy-γ-PyPyIm-β-PyPy 1405β) 5'-W G G A C A T W-3' ImIm-β-PyPpy-γ-PyPyIm-β-PyPy 1406β) 5'-W G G A C A T W-3' ImIm-β-PyPpy-γ-PyPyIm-β-PyPy 1407β) 5'-W G G A C A C W-3' ImIm-β-PyPpy-γ-PyPpIm-β-PyPy 1408β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy		1385β) 5'-W G G A G T T W-3'	${\tt ImIm-\beta-ImHpHp-\gamma-PyPyPy-\beta-PyPy}$
1388β) 5'-W G G A G T C W-3' ImIm-β-ImHpPy-γ-ImPyPy-β-PyPy 1389β) 5'-W G G A G A T W-3' ImIm-β-ImPyPy-γ-PyHpPy-β-PyPy 1390β) 5'-W G G A G A G W-3' ImIm-β-ImPyPy-γ-PyHpPy-β-PyPy 1391β) 5'-W G G A G A G W-3' ImIm-β-ImPyPy-γ-PyHpPy-β-PyPy 1392β) 5'-W G G A G A C W-3' ImIm-β-ImPyPy-γ-PyHpPy-β-PyPy 1393β) 5'-W G G A G G T W-3' ImIm-β-ImPyPy-γ-PyPy-β-PyPy 1394β) 5'-W G G A G C T W-3' ImIm-β-ImPyPy-γ-PyPy-β-PyPy 1395β) 5'-W G G A G C T W-3' ImIm-β-ImPyPy-γ-PyPy-β-PyPy 1397β) 5'-W G G A G C A W-3' ImIm-β-ImPyPy-γ-PyPy-β-PyPy 1398β) 5'-W G G A G C C W-3' ImIm-β-ImImPy-γ-PyPy-β-PyPy 1399β) 5'-W G G A G C C W-3' ImIm-β-ImPyIm-γ-PyPy-β-PyPy 1400β) 5'-W G G A G C C W-3' ImIm-β-ImPyIm-γ-PyImPy-β-PyPy 1400β) 5'-W G G A C T T W-3' ImIm-β-ImPyPy-γ-PyImPy-β-PyPy 1402β) 5'-W G G A C T C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1403β) 5'-W G G A C T C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1404β) 5'-W G G A C T C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1405β) 5'-W G G A C A A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1406β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1407β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1408β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C C C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C C C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C C C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C C C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C C C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C C C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C C C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C C C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C C C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C C C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G C C W-3' ImIm-β-PyPyPy-γ-PyPy	5	1386β) ·5'-W G G A G T A W-3'	${\tt ImIm-\beta-ImHpPy-\gamma-HpPyPy-\beta-PyPy}$
1389β) 5'-W G G A G A T W-3' ImIm-β-ImPyHp-γ-PyHpPy-β-PyPy 1390β) 5'-W G G A G A A W-3' ImIm-β-ImPyHp-γ-PyHpPy-β-PyPy 1391β) 5'-W G G A G A G W-3' ImIm-β-ImPyHp-γ-PyHpPy-β-PyPy 1392β) 5'-W G G A G A C W-3' ImIm-β-ImPyPy-γ-ImPyPy-β-PyPy 1393β) 5'-W G G A G G T W-3' ImIm-β-ImPyPy-γ-ImPyPy-β-PyPy 1394β) 5'-W G G A G G T W-3' ImIm-β-ImPyHp-γ-PyPyPy-β-PyPy 1395β) 5'-W G G A G C T W-3' ImIm-β-ImPyHp-γ-PyImPy-β-PyPy 1397β) 5'-W G G A G C A W-3' ImIm-β-ImPyPy-γ-HpImPy-β-PyPy 1398β) 5'-W G G A G G C W-3' ImIm-β-ImImPy-γ-ImPyPy-β-PyPy 1399β) 5'-W G G A G C C W-3' ImIm-β-ImImPy-γ-ImPy-β-PyPy 1400β) 5'-W G G A G C C W-3' ImIm-β-ImPyHp-γ-PyImPy-β-PyPy 1401β) 5'-W G G A C T T W-3' ImIm-β-ImPyPy-γ-ImImPy-β-PyPy 1402β) 5'-W G G A C T C W-3' ImIm-β-PyHpHp-γ-PyPyIm-β-PyPy 1403β) 5'-W G G A C T C W-3' ImIm-β-PyHpHp-γ-PyPyIm-β-PyPy 1404β) 5'-W G G A C T C W-3' ImIm-β-PyHpHp-γ-PyPyIm-β-PyPy 1404β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-ImPyIm-β-PyPy 1404β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyHpIm-β-PyPy 1405β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyHpIm-β-PyPy 1406β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyHpIm-β-PyPy 1407β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyHpIm-β-PyPy 1408β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyHpIm-β-PyPy 1409β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyHpIm-β-PyPy 1409β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyHpIm-β-PyPy 1409β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyHpIm-β-PyPy 1409β) 5'-W G G A C C C W-3' ImIm-β-PyPyPy-γ-PyHpIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyPy-γ-PyHpIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyPy-γ-PyHpIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy		1387β) 5'-W G G A G T G W-3'	${\tt ImIm-\beta-ImHpIm-\gamma-PyPyPy-\beta-PyPy}$
1390β) 5'-W G G A G A A W-3' ImIm-β-ImPyPy-γ-HpHpPy-β-PyPy 1391β) 5'-W G G A G A G W-3' ImIm-β-ImPyPy-γ-HpHpPy-β-PyPy 1392β) 5'-W G G A G A C W-3' ImIm-β-ImPyPy-γ-ImHpPy-β-PyPy 1393β) 5'-W G G A G G T W-3' ImIm-β-ImImHp-γ-PyPyPy-β-PyPy 1394β) 5'-W G G A G G A W-3' ImIm-β-ImImHp-γ-PyPyPy-β-PyPy 1395β) 5'-W G G A G C T W-3' ImIm-β-ImImPy-γ-HpPyPy-β-PyPy 1396β) 5'-W G G A G C A W-3' ImIm-β-ImImPy-γ-PyPyPy-β-PyPy 1397β) 5'-W G G A G G W-3' ImIm-β-ImImPy-γ-HpPyPy-β-PyPy 1398β) 5'-W G G A G C W-3' ImIm-β-ImImPy-γ-ImPy-β-PyPy 1399β) 5'-W G G A G C W-3' ImIm-β-ImPyIm-γ-PyImPy-β-PyPy 1400β) 5'-W G G A C C W-3' ImIm-β-ImPyPy-γ-ImImPy-β-PyPy 1401β) 5'-W G G A C T T W-3' ImIm-β-PyPhp-γ-PyPyIm-β-PyPy 1402β) 5'-W G G A C T C W-3' ImIm-β-PyPhp-γ-PyPyIm-β-PyPy 1403β) 5'-W G G A C T C W-3' ImIm-β-PyPhp-γ-PyPyIm-β-PyPy 1405β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-ImPyIm-β-PyPy 1406β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-HpPyIm-β-PyPy 1407β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-HpPyIm-β-PyPy 1408β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-HpPyIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyPy-γ-HpPyIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyPy-γ-HpPyIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyPy-γ-HpPyIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyPy-γ-HpPyIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyPy-γ-HpPyIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyPy-γ-HpPyIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyPy-γ-HpPyIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyPy-γ-HpPyIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyImPγ-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyPy-γ-HpPyIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyPy-γ-HpPyIm-β-PyPy		1388β) 5'-W G G A G T C W-3'	${\tt ImIm-\beta-ImHpPy-\gamma-ImPyPy-\beta-PyPy}$
1391β) 5'-W G G A G A G W-3' ImIm-β-ImPyIm-γ-PyHpPy-β-PyPy 1392β) 5'-W G G A G A C W-3' ImIm-β-ImPyPy-γ-ImHpPy-β-PyPy 1393β) 5'-W G G A G G T W-3' ImIm-β-ImImHp-γ-PyPyPy-β-PyPy 1394β) 5'-W G G A G G A W-3' ImIm-β-ImImPy-γ-PyPyPy-β-PyPy 1395β) 5'-W G G A G C T W-3' ImIm-β-ImPyPy-γ-PyPy-β-PyPy 1396β) 5'-W G G A G C A W-3' ImIm-β-ImPyPy-γ-PyPy-β-PyPy 1397β) 5'-W G G A G C G W-3' ImIm-β-ImPyPy-γ-PyPy-β-PyPy 1399β) 5'-W G G A G C G W-3' ImIm-β-ImPyPy-γ-PyPy-β-PyPy 1399β) 5'-W G G A G C G W-3' ImIm-β-ImPyPy-γ-ImPy-β-PyPy 1400β) 5'-W G G A C T T W-3' ImIm-β-ImPyPy-γ-ImImPy-β-PyPy 1401β) 5'-W G G A C T C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1402β) 5'-W G G A C T C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1403β) 5'-W G G A C T C W-3' ImIm-β-PyPyPy-γ-ImPyIm-β-PyPy 1405β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1406β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1407β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1408β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1408β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy		1389β) 5'-W G G A G A T W-3'	${\tt ImIm-\beta-ImPyHp-\gamma-PyHpPy-\beta-PyPy}$
1392β) 5'-W G G A G A C W-3' ImIm-β-ImPyPy-β-PyPy 1393β) 5'-W G G A G G T W-3' ImIm-β-ImImHp-γ-PyPyPy-β-PyPy 1394β) 5'-W G G A G G A W-3' ImIm-β-ImImHp-γ-PyPyPy-β-PyPy 1395β) 5'-W G G A G C A W-3' ImIm-β-ImImPy-γ-PyPyPy-β-PyPy 1396β) 5'-W G G A G C A W-3' ImIm-β-ImPyPy-γ-PyPy-β-PyPy 1398β) 5'-W G G A G G G W-3' ImIm-β-ImImPy-γ-PyPyPy-β-PyPy 1399β) 5'-W G G A G G C W-3' ImIm-β-ImImPy-γ-ImPyPy-β-PyPy 1399β) 5'-W G G A G C C W-3' ImIm-β-ImPyPy-γ-PyPy-β-PyPy 1400β) 5'-W G G A G C C W-3' ImIm-β-ImPyPy-γ-PyPy-β-PyPy 1401β) 5'-W G G A C T T W-3' ImIm-β-PyPpy-γ-PyPyIm-β-PyPy 1403β) 5'-W G G A C T C W-3' ImIm-β-PyPpy-γ-PyPyIm-β-PyPy 1404β) 5'-W G G A C T C W-3' ImIm-β-PyPpy-γ-PyPyIm-β-PyPy 1405β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1406β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1408β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-ImPyIm-β-PyPy 1409β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy		1390β) 5'-W G G A G A A W-3'	${\tt ImIm-\beta-ImPyPy-\gamma-HpHpPy-\beta-PyPy}$
1393β) 5'-W G G A G G T W-3' ImIm-β-ImImHp-γ-PyPyPy-β-PyPy 1394β) 5'-W G G A G G A W-3' ImIm-β-ImImHp-γ-PyPyPy-β-PyPy 1395β) 5'-W G G A G C T W-3' ImIm-β-ImImPy-γ-PyPyPy-β-PyPy 1396β) 5'-W G G A G C A W-3' ImIm-β-ImPyPy-γ-PyImPy-β-PyPy 1397β) 5'-W G G A G G G W-3' ImIm-β-ImImIm-γ-PyPyPy-β-PyPy 1398β) 5'-W G G A G G C W-3' ImIm-β-ImImIm-γ-PyPyPy-β-PyPy 1399β) 5'-W G G A G C G W-3' ImIm-β-ImPyIm-γ-PyImPy-β-PyPy 1400β) 5'-W G G A G C C W-3' ImIm-β-ImPyIm-γ-PyImPy-β-PyPy 1401β) 5'-W G G A C T T W-3' ImIm-β-ImPyPy-γ-PyPyIm-β-PyPy 1402β) 5'-W G G A C T G W-3' ImIm-β-PyHpPy-γ-PyPyIm-β-PyPy 1403β) 5'-W G G A C T C W-3' ImIm-β-PyHpPy-γ-PyPyIm-β-PyPy 1405β) 5'-W G G A C A T W-3' ImIm-β-PyPyPy-γ-ImPyIm-β-PyPy 1406β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1407β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1408β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy	10	1391β) 5'-W G G A G A G W-3'	${\tt ImIm-\beta-ImPyIm-\gamma-PyHpPy-\beta-PyPy}$
1394β) 5'-W G G A G G A W-3' ImIm-β-ImImPy-γ-HpPyPy-β-PyPy 1395β) 5'-W G G A G C T W-3' ImIm-β-ImPyHp-γ-PyImPy-β-PyPy 1396β) 5'-W G G A G C A W-3' ImIm-β-ImPyHp-γ-PyImPy-β-PyPy 1397β) 5'-W G G A G G G W-3' ImIm-β-ImImPy-γ-HpPyPy-β-PyPy 1398β) 5'-W G G A G C G W-3' ImIm-β-ImImPy-γ-ImPyPy-β-PyPy 1399β) 5'-W G G A G C G W-3' ImIm-β-ImPyIm-γ-PyImPy-β-PyPy 1400β) 5'-W G G A G C C W-3' ImIm-β-ImPyIm-γ-PyImPy-β-PyPy 1402β) 5'-W G G A C T T W-3' ImIm-β-PyHpHp-γ-PyPyIm-β-PyPy 1403β) 5'-W G G A C T G W-3' ImIm-β-PyHpIm-γ-PyPyIm-β-PyPy 1404β) 5'-W G G A C T C W-3' ImIm-β-PyHpIm-γ-PyPyIm-β-PyPy 1405β) 5'-W G G A C A T W-3' ImIm-β-PyHpPy-γ-ImPyIm-β-PyPy 1406β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyHpIm-β-PyPy 1407β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyHpIm-β-PyPy 1408β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-PyHpIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyPy-γ-PyHpIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyIm-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyIm-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy		1392β) 5'-W G G A G A C W-3'	${\tt ImIm-\beta-ImPyPy-\gamma-ImHpPy-\beta-PyPy}$
1395β) 5'-W G G A G C T W-3' ImIm-β-ImPyHp-γ-PyImPy-β-PyPy 1397β) 5'-W G G A G C A W-3' ImIm-β-ImPyHp-γ-PyPyPy-β-PyPy 1397β) 5'-W G G A G G G W-3' ImIm-β-ImImIm-γ-PyPyPy-β-PyPy 1398β) 5'-W G G A G G C W-3' ImIm-β-ImImIm-γ-PyPyPy-β-PyPy 1399β) 5'-W G G A G C C W-3' ImIm-β-ImPyIm-γ-PyImPy-β-PyPy 1400β) 5'-W G G A G C C W-3' ImIm-β-ImPyPy-γ-ImImPy-β-PyPy 1401β) 5'-W G G A C T T W-3' ImIm-β-PyHpHp-γ-PyPyIm-β-PyPy 1402β) 5'-W G G A C T G W-3' ImIm-β-PyHpPy-γ-HpPyIm-β-PyPy 1403β) 5'-W G G A C T C W-3' ImIm-β-PyHpIm-γ-PyPyIm-β-PyPy 1404β) 5'-W G G A C T C W-3' ImIm-β-PyHpPy-γ-ImPyIm-β-PyPy 1405β) 5'-W G G A C A T W-3' ImIm-β-PyPyPy-γ-ImPyIm-β-PyPy 1406β) 5'-W G G A C A G W-3' ImIm-β-PyPyPy-γ-PyHpIm-β-PyPy 1407β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-HpPIm-β-PyPy 1408β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-ImPpIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-ImPpIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-ImPpIm-β-PyPy 1409β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy		1393β) 5'-W G G A G G T W-3'	${\tt ImIm-\beta-ImImHp-\gamma-PyPyPy-\beta-PyPy}$
1396β) 5'-W G G A G C A W-3' ImIm-β-ImPyPy-γ-HpImPy-β-PyPy 1397β) 5'-W G G A G G G W-3' ImIm-β-ImImIm-γ-PyPyPy-β-PyPy 1398β) 5'-W G G A G G C W-3' ImIm-β-ImImIm-γ-PyPyPy-β-PyPy 1399β) 5'-W G G A G C G W-3' ImIm-β-ImImPy-γ-ImPyPy-β-PyPy 1400β) 5'-W G G A G C C W-3' ImIm-β-ImPyPy-γ-ImImPy-β-PyPy 1401β) 5'-W G G A C T T W-3' ImIm-β-PyHpHp-γ-PyPyIm-β-PyPy 1402β) 5'-W G G A C T A W-3' ImIm-β-PyHpPy-γ-HpPyIm-β-PyPy 1403β) 5'-W G G A C T C W-3' ImIm-β-PyHpPy-γ-PyPyIm-β-PyPy 1404β) 5'-W G G A C A T W-3' ImIm-β-PyPyPy-γ-ImPyIm-β-PyPy 1405β) 5'-W G G A C A A W-3' ImIm-β-PyPyPy-γ-PyHpIm-β-PyPy 1407β) 5'-W G G A C A G W-3' ImIm-β-PyPyPy-γ-PyHpIm-β-PyPy 1408β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-ImPyIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyPy-γ-ImHpIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyHpIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyPyHp-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyPyHp-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyPyHp-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyPyHp-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyPyHp-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyPyHp-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyPyHp-γ-PyPyIm-β-PyPy		1394β) 5'-W G G A G G A W-3'	${\tt ImIm-\beta-ImImPy-\gamma-HpPyPy-\beta-PyPy}$
1397β) 5'-W G G A G G G W-3' ImIm-β-ImImIm-γ-PyPyPy-β-PyPy 1398β) 5'-W G G A G G C W-3' ImIm-β-ImImPy-γ-ImPyPy-β-PyPy 1399β) 5'-W G G A G C G W-3' ImIm-β-ImPyIm-γ-PyImPy-β-PyPy 1400β) 5'-W G G A G C C W-3' ImIm-β-ImPyIm-γ-PyImPy-β-PyPy 1401β) 5'-W G G A C T T W-3' ImIm-β-ImPyPy-γ-ImImPy-β-PyPy 1402β) 5'-W G G A C T A W-3' ImIm-β-PyHpHp-γ-PyPyIm-β-PyPy 1403β) 5'-W G G A C T C W-3' ImIm-β-PyHpIm-γ-PyPyIm-β-PyPy 1404β) 5'-W G G A C T C W-3' ImIm-β-PyHpPy-γ-ImPyIm-β-PyPy 1405β) 5'-W G G A C A T W-3' ImIm-β-PyPyPy-γ-ImPyIm-β-PyPy 1407β) 5'-W G G A C A G W-3' ImIm-β-PyPyPy-γ-PyHpIm-β-PyPy 1408β) 5'-W G G A C A C W-3' ImIm-β-PyPyIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyImPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C C T W-3' ImIm-β-PyImPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C C T W-3' ImIm-β-PyPyHp-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C C T W-3' ImIm-β-PyPyHp-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyPyHp-γ-PyPyIm-β-PyPy		1395β) 5'-W G G A G C T W-3'	${\tt ImIm-\beta-ImPyHp-\gamma-PyImPy-\beta-PyPy}$
1398β) 5'-W G G A G G C W-3' ImIm-β-ImImPy-γ-ImPyPy-β-PyPy 1399β) 5'-W G G A G C G W-3' ImIm-β-ImPyIm-γ-PyImPy-β-PyPy 1400β) 5'-W G G A G C C W-3' ImIm-β-ImPyIm-γ-PyImPy-β-PyPy 1401β) 5'-W G G A C T T W-3' ImIm-β-ImPyPy-γ-ImImPy-β-PyPy 1402β) 5'-W G G A C T G W-3' ImIm-β-PyHpPy-γ-PyPyIm-β-PyPy 1403β) 5'-W G G A C T C W-3' ImIm-β-PyHpIm-γ-PyPyIm-β-PyPy 1404β) 5'-W G G A C T C W-3' ImIm-β-PyPyPy-γ-ImPyIm-β-PyPy 1405β) 5'-W G G A C A T W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1406β) 5'-W G G A C A A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1407β) 5'-W G G A C A G W-3' ImIm-β-PyPyIm-γ-PyPyIm-β-PyPy 1408β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-ImPpIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyPyPy-γ-PyPyIm-β-PyPy	15	1396β) 5'-W G G A G C A W-3'	${\tt ImIm-\beta-ImPyPy-\gamma-HpImPy-\beta-PyPy}$
1399β) 5'-W G G A G C G W-3' ImIm-β-ImPyIm-γ-PyImPy-β-PyPy 1400β) 5'-W G G A G C C W-3' ImIm-β-ImPyIm-γ-PyImPy-β-PyPy 1401β) 5'-W G G A C T T W-3' ImIm-β-PyHpHp-γ-PyPyIm-β-PyPy 1402β) 5'-W G G A C T A W-3' ImIm-β-PyHpHp-γ-PyPyIm-β-PyPy 1403β) 5'-W G G A C T G W-3' ImIm-β-PyHpPy-γ-ImPyIm-β-PyPy 1404β) 5'-W G G A C A T W-3' ImIm-β-PyHpPy-γ-ImPyIm-β-PyPy 1405β) 5'-W G G A C A T W-3' ImIm-β-PyPyHp-γ-PyHpIm-β-PyPy 1406β) 5'-W G G A C A G W-3' ImIm-β-PyPyPy-γ-HpHpIm-β-PyPy 1407β) 5'-W G G A C A G W-3' ImIm-β-PyPyPy-γ-HpHpIm-β-PyPy 1408β) 5'-W G G A C G T W-3' ImIm-β-PyPyPy-γ-ImHpIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyPy-γ-ImHpIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyImPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C C T W-3' ImIm-β-PyImPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C C T W-3' ImIm-β-PyPyPy-γ-PyPyImIm-β-PyPy		1397β) 5'-W G G A G G W-3'	${\tt ImIm-\beta-ImImIm-\gamma-PyPyPy-\beta-PyPy}$
1400β) 5'-W G G A G C C W-3' ImIm-β-ImPyPy-γ-ImImPy-β-PyPy 1401β) 5'-W G G A C T T W-3' ImIm-β-PyHpHp-γ-PyPyIm-β-PyPy 1402β) 5'-W G G A C T A W-3' ImIm-β-PyHpHp-γ-PyPyIm-β-PyPy 1403β) 5'-W G G A C T G W-3' ImIm-β-PyHpIm-γ-PyPyIm-β-PyPy 1404β) 5'-W G G A C T C W-3' ImIm-β-PyHpPy-γ-ImPyIm-β-PyPy 1405β) 5'-W G G A C A T W-3' ImIm-β-PyPyHp-γ-PyHpIm-β-PyPy 1406β) 5'-W G G A C A A W-3' ImIm-β-PyPyPy-γ-HpHpIm-β-PyPy 1407β) 5'-W G G A C A G W-3' ImIm-β-PyPyIm-γ-PyHpIm-β-PyPy 1408β) 5'-W G G A C A C W-3' ImIm-β-PyPyIm-γ-PyHpIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyImHp-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyImPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C C T W-3' ImIm-β-PyPyHp-γ-PyImIm-β-PyPy		1398β) 5'-W G G A G G C W-3'	${\tt ImIm-\beta-ImImPy-\gamma-ImPyPy-\beta-PyPy}$
20 1401β) 5'-W G G A C T T W-3' ImIm-β-PyHpHp-γ-PyPyIm-β-PyPy 1402β) 5'-W G G A C T A W-3' ImIm-β-PyHpPy-γ-HpPyIm-β-PyPy 1403β) 5'-W G G A C T G W-3' ImIm-β-PyHpIm-γ-PyPyIm-β-PyPy 1404β) 5'-W G G A C T C W-3' ImIm-β-PyHpPy-γ-ImPyIm-β-PyPy 1405β) 5'-W G G A C A T W-3' ImIm-β-PyPyHp-γ-PyHpIm-β-PyPy 1406β) 5'-W G G A C A A W-3' ImIm-β-PyPyPy-γ-HpHpIm-β-PyPy 1407β) 5'-W G G A C A G W-3' ImIm-β-PyPyIm-γ-PyHpIm-β-PyPy 1408β) 5'-W G G A C G T W-3' ImIm-β-PyPyPy-γ-ImHpIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyImPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyImPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C C T W-3' ImIm-β-PyImPy-γ-PyPyIm-β-PyPy 1411β) 5'-W G G A C C T W-3' ImIm-β-PyPyHp-γ-PyImIm-β-PyPy		1399β) 5'-W G G A G C G W-3'	$lmlm-\beta-lmPylm-\gamma-PylmPy-\beta-PyPy$
1402β) 5'-W G G A C T A W-3' ImIm-β-PyHpPy-γ-HpPyIm-β-PyPy 1403β) 5'-W G G A C T G W-3' ImIm-β-PyHpIm-γ-PyPyIm-β-PyPy 1404β) 5'-W G G A C T C W-3' ImIm-β-PyHpPy-γ-ImPyIm-β-PyPy 1405β) 5'-W G G A C A T W-3' ImIm-β-PyPyHp-γ-PyHpIm-β-PyPy 1406β) 5'-W G G A C A A W-3' ImIm-β-PyPyPy-γ-HpHpIm-β-PyPy 1407β) 5'-W G G A C A G W-3' ImIm-β-PyPyIm-γ-PyHpIm-β-PyPy 1408β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-ImHpIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyImHp-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyImPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C C T W-3' ImIm-β-PyImPy-γ-PyImIm-β-PyPy		1400β) 5'-W G G A G C C W-3'	${\tt ImIm-\beta-ImPyPy-\gamma-ImImPy-\beta-PyPy}$
1403β) 5'-W G G A C T G W-3' ImIm-β-PyHpIm-γ-PyPyIm-β-PyPy 1404β) 5'-W G G A C T C W-3' ImIm-β-PyHpPy-γ-ImPyIm-β-PyPy 1405β) 5'-W G G A C A T W-3' ImIm-β-PyPyHp-γ-PyHpIm-β-PyPy 1406β) 5'-W G G A C A A W-3' ImIm-β-PyPyPy-γ-HpHpIm-β-PyPy 1407β) 5'-W G G A C A G W-3' ImIm-β-PyPyIm-γ-PyHpIm-β-PyPy 1408β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-ImHpIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyImPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyImPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C C T W-3' ImIm-β-PyPyHp-γ-PyImIm-β-PyPy 1411β) 5'-W G G A C C T W-3' ImIm-β-PyPyHp-γ-PyImIm-β-PyPy	20	1401β) 5'W G G A C T T W-3'	$ImIm-\beta-PyHpHp-\gamma-PyPyIm-\beta-PyPy$
1404β) 5'-W G G A C T C W-3' ImIm-β-PyHpPy-γ-ImPyIm-β-PyPy 1405β) 5'-W G G A C A T W-3' ImIm-β-PyPyHp-γ-PyHpIm-β-PyPy 1406β) 5'-W G G A C A A W-3' ImIm-β-PyPyPy-γ-HpHpIm-β-PyPy 1407β) 5'-W G G A C A G W-3' ImIm-β-PyPyIm-γ-PyHpIm-β-PyPy 1408β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-ImHpIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyImPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyImPy-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C C T W-3' ImIm-β-PyPyHp-γ-PyImIm-β-PyPy		1402β) 5'-W G G A C T A W-3'	$ImIm-\beta-PyHpPy-\gamma-HpPyIm-\beta-PyPy$
1405β) 5'-W G G A C A T W-3' ImIm-β-PyPyHp-γ-PyHpIm-β-PyPy 1406β) 5'-W G G A C A A W-3' ImIm-β-PyPyPy-γ-HpHpIm-β-PyPy 1407β) 5'-W G G A C A G W-3' ImIm-β-PyPyIm-γ-PyHpIm-β-PyPy 1408β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-ImHpIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyImHp-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyImPy-γ-HpPyIm-β-PyPy 1411β) 5'-W G G A C C T W-3' ImIm-β-PyPyHp-γ-PyImIm-β-PyPy		1403β) 5'-W G G A C T G W-3'	${\tt ImIm-\beta-PyHpIm-\gamma-PyPyIm-\beta-PyPy}$
25 1406β) 5'-W G G A C A A W-3' ImIm-β-PyPyPy-γ-HpHpIm-β-PyPy 1407β) 5'-W G G A C A G W-3' ImIm-β-PyPyIm-γ-PyHpIm-β-PyPy 1408β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-ImHpIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyImHp-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyImPy-γ-HpPyIm-β-PyPy 30 1411β) 5'-W G G A C C T W-3' ImIm-β-PyPyHp-γ-PyImIm-β-PyPy		1404 β) 5'-W G G A C T C W-3'	${\tt ImIm-\beta-PyHpPy-\gamma-ImPyIm-\beta-PyPy}$
1407β) 5'-W G G A C A G W-3' ImIm-β-PyPyIm-γ-PyHpIm-β-PyPy 1408β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-ImHpIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyImHp-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyImPy-γ-HpPyIm-β-PyPy 30 1411β) 5'-W G G A C C T W-3' ImIm-β-PyPyHp-γ-PyImIm-β-PyPy		1405β) 5'-W G G A C A T W-3'	${\tt ImIm-\beta-PyPyHp-\gamma-PyHpIm-\beta-PyPy}$
1408β) 5'-W G G A C A C W-3' ImIm-β-PyPyPy-γ-ImHpIm-β-PyPy 1409β) 5'-W G G A C G T W-3' ImIm-β-PyImHp-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyImPy-γ-HpPyIm-β-PyPy 30 1411β) 5'-W G G A C C T W-3' ImIm-β-PyPyHp-γ-PyImIm-β-PyPy	25	1406β) 5'-W G G A C A A W-3'	${\tt ImIm-eta-PyPyPy-\gamma-HpHpIm-eta-PyPy}$
1409β) 5'-W G G A C G T W-3' ImIm-β-PyImHp-γ-PyPyIm-β-PyPy 1410β) 5'-W G G A C G A W-3' ImIm-β-PyImPy-γ-HpPyIm-β-PyPy 30 1411β) 5'-W G G A C C T W-3' ImIm-β-PyPyHp-γ-PyImIm-β-PyPy		1407β) 5'-W G G A C A G W-3'	$^{\circ}$ ImIm- β -РуРуІm- γ -РуНрІm- β -РуРу
1410β) 5'-W G G A C G A W-3' ImIm-β-PyImPy-γ-HpPyIm-β-PyPy 30 1411β) 5'-W G G A C C T W-3' ImIm-β-PyPyHp-γ-PyImIm-β-PyPy		1408β) 5'-W G G A C A C W-3'	${\tt ImIm-\beta-PyPyPy-\gamma-ImHpIm-\beta-PyPy}$
30 1411β) 5'-W G G A C C T W-3' ImIm-β-PyPyHp-γ-PyImIm-β-PyPy		1409 β) 5'-W G G A C G T W-3'	${\tt ImIm}$ - ${\tt B}$ - ${\tt PyImHp}$ - ${\tt Y}$ - ${\tt PyPyIm}$ - ${\tt B}$ - ${\tt PyPy}$
		1410 β) 5'-W G G A C G A W-3'	${\tt Imim-\beta-PyImPy-\gamma-HpPyIm-\beta-PyPy}$
1412 β) 5'-W G G A C C A W-3' ImIm- β -PyPyPy- γ -HpImIm- β -PyPy	30	1411β) 5'-W G G A C C T W-3'	
		1412β) 5'-W G G A C C A W-3'	
1413 β) 5'-W G G A C G G W-3' ImIm- β -PyImIm- γ -PyPyIm- β -PyPy		' '	
1414 β) 5'-W G G A C G C W-3' ImIm- β -PyImPy- γ -ImPyIm- β -PyPy		1414 β) 5'-W G G A C G C W-3'	${\tt ImIm-eta-PyImPy-\gamma-ImPyIm-eta-PyPy}$
1415 β) 5'-W G G A C C G W-3' ImIm- β -PyPyIm- γ -PyImIm- β -PyPy		1415β) 5'-W G G A C C G W-3'	
35 1416 β) 5'-W G G A C C C W-3' ImIm-β-РуРуРу-γ-ImImIm-β-РуРу	35	1416β) 5'-W G G A C C C W-3'	ImIm-β-РуРуРу-γ-ImImIm-β-РуРу

_	TABLE 154: 12-ring β-Hairpin Polyamides fo	
_	DNA sequence	aromatic amino acid sequence
	1417β) 5'-W G G C T T T W-3'	${\tt ImImPy-}\beta{\tt -HpHp-}\gamma{\tt -PyPy-}\beta{\tt -ImPyPy}$
5	1418β) 5'-W G G C T T A W-3'	${\tt ImImPy-}\beta{\tt -HpPy-}\gamma{\tt -HpPy-}\beta{\tt -ImPyPy}$
	1419β) 5'-W G G C T T G W-3'	${\tt ImImPy-\beta-HpIm-\gamma-PyPy-\beta-ImPyPy}$
	1420β) 5'-W G G C T T C W-3'	${\tt ImImPy-}\beta{\tt -HpPy-}\gamma{\tt -ImPy-}\beta{\tt -ImPyPy}$
	1421β) 5'-W G G C T A T W-3'	${\tt ImImPy-\beta-PyHp-\gamma-PyHp-\beta-ImPyPy}$
	1422β) 5'-W G G C T A A W-3'	${\tt ImImPy-}\beta-{\tt PyPy-}\gamma-{\tt HpHp-}\beta-{\tt ImPyPy}$
10	1423β) 5'-W G G C T A G W-3'	${\tt ImImPy-\beta-PyIm-\gamma-PyHp-\beta-ImPyPy}$
	1424β) 5'-W G G C T A C W-3'	${\tt ImImPy-\beta-PyPy-\gamma-ImHp-\beta-ImPyPy}$
	1425β) 5'-W G G C T G T W-3'	${\tt ImImPy-}\beta\hbox{-}{\tt ImHp-}\gamma\hbox{-}{\tt PyPy-}\beta\hbox{-}{\tt ImPyPy}$
	1426β) 5'-W G G C T G A W-3'	${\tt ImImPy-}\beta-{\tt ImPy-}\gamma-{\tt HpPy-}\beta-{\tt ImPyPy}$
	1427β) 5'-W G G C T G G W-3'	${\tt ImImPy-}\beta{\tt -ImIm-}\gamma{\tt -PyPy-}\beta{\tt -ImPyPy}$
15	1428β) 5'-W G G C T G C W-3'	${\tt ImImPy-\beta-ImPy-\gamma-ImPy-\beta-ImPyPy}$
	1429β) 5'-W G G C T C T W-3'	${\tt ImImPy-\beta-PyHp-\gamma-PyIm-\beta-ImPyPy}$
	1430β) 5'-W G G C T C A W-3'	${\tt ImImPy-\beta-PyPy-\gamma-HpIm-\beta-ImPyPy}$
	1431β) 5'-W G G C T C G W-3'	${\tt ImImPy-\beta-PyIm-\gamma-PyIm-\beta-ImPyPy}$
	1432β) 5'-W G G C T C C W-3'	${\tt ImImPy-\beta-PyPy-\gamma-ImIm-\beta-ImPyPy}$
20	1433β) 5'-W G G C A T T W-3'	${\tt ImImPy-\beta-HpHp-\gamma-PyPy-\beta-ImPyPy}$
	1434β) 5'-W G G C A T A W-3'	${\tt ImImPy-\beta-HpPy-\gamma-HpPy-\beta-ImPyPy}$
	1435β) 5'-W G G C A T G W-3'	${\tt ImImPy-\beta-HpIm-\gamma-PyPy-\beta-ImPyPy}$
	1436β) 5'-W G G C A T C W-3'	${\tt ImImPy-}\beta{\tt -HpPy-}\gamma{\tt -ImPy-}\beta{\tt -ImPyPy}$
	1437β) 5'-W G G C A A T W-3'	${\tt ImImPy-\beta-PyHp-\gamma-PyHp-\beta-ImPyPy}$
25	1438β) 5'-W G G C A A A W-3'	${\tt ImImPy-\beta-PyPy-\gamma-HpHp-\beta-ImPyPy}$
	1439β) 5'-W G G C A A G W-3'	$\verb `ImImPy-\beta-PyIm-\gamma-PyHp-\beta-ImPyPy $
	1440β) 5'-W G G C A A C W-3'	${\tt ImImPy-\beta-PyPy-\gamma-ImHp-\beta-ImPyPy}$
	1441β) 5'-W G G C A G T W-3'	${\tt ImImPy-}\beta\hbox{-}{\tt ImHp-}\gamma\hbox{-}{\tt PyPy-}\beta\hbox{-}{\tt ImPyPy}$
	1442β) 5'-W G G C A G A W-3'	${\tt ImImPy-\beta-ImPy-\gamma-HpPy-\beta-ImPyPy}$
30	1443β) 5'-W G G C A G G W-3'	${\tt ImImPy-\beta-ImIm-\gamma-PyPy-\beta-ImPyPy}$
	1444β) 5'-W G G C A G C W-3'	${\tt ImImPy-\beta-ImPy-\gamma-ImPy-\beta-ImPyPy}$
	1445β) 5′-W G G C A C T W-3′	${\tt ImImPy-}\beta\hbox{-}{\tt PyHp-}\gamma\hbox{-}{\tt PyIm-}\beta\hbox{-}{\tt ImPyPy}$
	1446β) 5'-W G G C A C A W-3'	${\tt ImImPy-\beta-PyPy-\gamma-HpIm-\beta-ImPyPy}$
	1447β) 5'-W G G C A C G W-3'	${\tt ImImPy-\beta-PyIm-\gamma-PyIm-\beta-ImPyPy}$
35	1448β) 5'-W G G C A C C W-3'	${\tt ImImPy-\beta-PyPy-\gamma-ImIm-\beta-ImPyPy}$

	TABLE 155: 12-ring β-Hairpin Polyamides for	or recognition of 8-bp 5'-WGGCSNNW-3'
	DNA sequence	aromatic amino acid sequence
	1449β) 5'-W G G C G T T W-3'	${\tt ImIm-\beta-ImHpHp-\gamma-PyPy-\beta-ImPyPy}$
5	1450β) 5'-W G G C G T A W-3'	${\tt ImIm-\beta-ImHpPy-\gamma-HpPy-\beta-ImPyPy}$
	1451β) 5'-W G G C G T G W-3'	${\tt ImIm-\beta-ImHpIm-\gamma-PyPy-\beta-ImPyPy}$
	1452β) 5'-W G G C G T C W-3'	${\tt ImIm-\beta-ImHpPy-\gamma-ImPy-\beta-ImPyPy}$
	1453β) 5'-W G G C G A T W-3'	${\tt ImIm-\beta-ImPyHp-\gamma-PyHp-\beta-ImPyPy}$
	1454 eta) 5'-W G G C G A A W-3'	$ImIm-\beta-ImPyPy-\gamma-HpHp-\beta-ImPyPy$
10	1455 β) 5'-W G G C G A G W-3'	${\tt ImIm-\beta-ImPyIm-\gamma-PyHp-\beta-ImPyPy}$
	1456β) 5'-W G G C G A C W-3'	${\tt ImIm-\beta-ImPyPy-\gamma-ImHp-\beta-ImPyPy}$
	1457 β) 5'-W G G C G G T W-3'	${\tt ImIm-\beta-ImImHp-\gamma-PyPy-\beta-ImPyPy}$
	1458β) 5'-W G G C G G A W-3'	${\tt ImIm-\beta-ImImPy-\gamma-HpPy-\beta-ImPyPy}$
	1459β) 5'-W G G C G C T W-3'	${\tt ImIm-}\beta\hbox{-}{\tt ImPyHp-}\gamma\hbox{-}{\tt PyIm-}\beta\hbox{-}{\tt ImPyPy}$
15	1460β) 5'-W G G C G C A W-3'	${\tt ImIm-\beta-ImPyPy-\gamma-HpIm-\beta-ImPyPy}$
	1461β) 5'-W G G C C T T W-3'	${\tt ImIm-\beta-PyHpHp-\gamma-Py-\beta-ImImPyPy}$
	1462β) 5'-W G G C C T A W-3'	${\tt ImIm-}\beta - {\tt PyHpPy-}\gamma - {\tt Hp-}\beta - {\tt ImImPyPy}$
	1463β) 5'-W G G C C T G W-3'	${\tt ImIm-\beta-PyHpIm-\gamma-Py-\beta-ImImPyPy}$
	1464β) 5'-W G G C C T C W-3'	${\tt ImIm-\beta-PyHpPy-\gamma-Im-\beta-ImImPyPy}$
20	1465β) 5'-W G G C C A T W-3'	$ \label{eq:limin-beta-py-py-py-below} \text{ImIm-}\beta\text{-Py-py-hp-}\gamma\text{-Py-}\beta\text{-ImIm-py-Py} \qquad \cdot . $
	1466β) 5'-W G G C C A A W-3'	${\tt ImIm-\beta-PyPyPy-\gamma-Hp-\beta-ImImPyPy}$
	1467β) 5'-W G G C C A G W-3'	${\tt ImIm-\beta-PyPyIm-\gamma-Py-\beta-ImImPyPy}$
	1468β) 5'-W G G C C A C W-3'	$ImIm-\beta-PyPyPy-\gamma-Im-\beta-ImImPyPy$
	1469β) 5'-W G G C C G T W-3'	${\tt ImIm-\beta-PyImHp-\gamma-Py-\beta-ImImPyPy}$
25	1470β) 5'-W G G C C G A W-3'	${\tt ImIm-\beta-PyImPy-\gamma-Hp-\beta-ImImPyPy}$
	1471β) 5'-W G G C C T W-3'	'ImIm-β-РуРуНр-γ-РуImImIm-β-Ру
	1472β) 5'-W G G C C A W-3'	${\tt ImIm}$ - ${\tt B}$ - ${\tt PyPyPy}$ - ${\tt \gamma}$ - ${\tt HpImImIm}$ - ${\tt B}$ - ${\tt Py}$
	G57β) 5'-W G G C G G G W-3'	${\tt ImIm-\beta-ImImIm-\gamma-PyPy-\beta-ImPyPy}$
	G58β) 5'-W G G C G G C W-3'	ImIm-β-ImImPy-γ-ImPy-β-ImPyPy
30	G59β) 5'-W G G C G C G W-3'	ImIm-β-ImPyIm-γ-PyIm-β-ImPyPy
	G60β) 5'-W G G C G C C W-3'	ImIm-β-ImPyPy-γ-ImIm-β-ImPyPy
	G61β) 5'-W G G C C G G W-3'	ImIm-β-PyImIm-γ-Py-β-ImImPyPy
	G62β) 5'-W G G C C G C W-3'	ImIm-β-PyImPy-γ-Im-β-ImImPyPy
	G63β) 5'-W G G C C G W-3'	ImIm-β-PyPyIm-γ-PyImImIm-β-Py
35	G64β) 5'-W G G C C C W-3'	ImIm-β-РуРуРу-γ-ImImImIm-β-Ру

	TABLE 156: 12-ring β-Hairpin Polyamides for	r recognition of 8-bp 5'-WGCGWNNW-3'
_	DNA sequence	aromatic amino acid sequence
	1473β) 5'-W G C G T T T W-3'	${\tt ImPyIm-\beta-HpHp-\gamma-PyPyPy-\beta-ImPy}$
5	1474β) ·5'-W G C G T T A W-3'	${\tt ImPyIm-}\beta{\tt -HpPy-}\gamma{\tt -HpPyPy-}\beta{\tt -ImPy}$
	1475β) 5'-W G C G T T G W-3'	${\tt ImPyIm-\beta-HpIm-\gamma-PyPyPy-\beta-ImPy}$
	1476β) 5'-W G C G T T C W-3'	${\tt ImPyIm-}\beta{\tt -HpPy-}\gamma{\tt -ImPyPy-}\beta{\tt -ImPy}$
	1477β) 5'-W G C G T A T W-3'	${\tt ImPyIm-}\beta{\tt -PyHp-}\gamma{\tt -PyHpPy-}\beta{\tt -ImPy}$
	1478β) 5'-W G C G T A A W-3'	${\tt ImPyIm-\beta-PyPy-\gamma-HpHpPy-\beta-ImPy}$
10	1479β) 5'-W G C G T A G W-3'	${\tt ImPyIm-\beta-PyIm-\gamma-PyHpPy-\beta-ImPy}$
	1480β) 5'-W G C G T A C W-3'	${\tt ImPyIm-\beta-PyPy-\gamma-ImHpPy-\beta-ImPy}$
	1481β) 5'-W G C G T G T W-3'	${\tt ImPyIm-}\beta\hbox{-}{\tt ImHp-}\gamma\hbox{-}{\tt PyPyPy-}\beta\hbox{-}{\tt ImPy}$
	1482β) 5'-W G C G T G A W-3'	${\tt ImPyIm-\beta-ImPy-\gamma-HpPyPy-\beta-ImPy}$
	1483β) 5'-W G C G T G G W-3'	${\tt ImPyIm-\beta-ImIm-\gamma-PyPyPy-\beta-ImPy}$
15	1484β) 5'-W G C G T G C W-3'	${\tt ImPyIm-\beta-ImPy-\gamma-ImPyPy-\beta-ImPy}$
	1485β) 5'-W G C G T C T W-3'	${\tt ImPyIm-\beta-PyHp-\gamma-PyImPy-\beta-ImPy}$
	1486β) 5'-W G C G T C A W-3'	${\tt ImPyIm-}\beta{\tt -PyPy-}\gamma{\tt -HpImPy-}\beta{\tt -ImPy}$
Ē	1487β) 5'-W G C G T C G W-3'	${\tt ImPyIm-\beta-PyIm-\gamma-PyImPy-\beta-ImPy}$
	1488β) 5'-W G C G T C C W-3'	${\tt ImPyIm-\beta-PyPy-\gamma-ImImPy-\beta-ImPy}$
20	1489β) 5'-W G C G A T T W-3'	${\tt ImPyIm-\beta-HpHp-\gamma-PyPyHp-\beta-ImPy}$
	1490β) 5'-W G C G A T A W-3'	${\tt ImPyIm-}\beta{\tt -HpPy-}\gamma{\tt -HpPyHp-}\beta{\tt -ImPy}$
	1491β) 5'-W G C G A T G W-3'	${\tt ImPyIm-\beta-HpIm-\gamma-PyPyHp-\beta-ImPy}$
	1492β) 5'-W G C G A T C W-3'	${\tt ImPyIm-\beta-HpPy-\gamma-ImPyHp-\beta-ImPy}$
	1493β) 5'-W G C G A A T W-3'	${\tt ImPyIm-\beta-PyHp-\gamma-PyHpHp-\beta-ImPy}$
25	1494β) 5'-W G C G A A A W-3'	${\tt ImPyIm-\beta-PyPy-\gamma-HpHpHp-\beta-ImPy}$
	1495β) 5'-W G C G A A G W-3'	$^{ ilde{}}$ ImPyIm- eta -PyIm- γ -PyHpHp- eta -ImPy
	1496β) 5'-W G C G A A C W-3'	${\tt ImPyIm-\beta-PyPy-\gamma-ImHpHp-\beta-ImPy}$
	1497β) 5'-W G C G A G T W-3'	${\tt ImPyIm-\beta-ImHp-\gamma-PyPyHp-\beta-ImPy}$
	1498β) 5'-W G C G A G A W-3'	${\tt ImPyIm-\beta-ImPy-\gamma-HpPyHp-\beta-ImPy}$
30	1499β) 5'-W G C G A G G W-3'	${\tt ImPyIm-\beta-ImIm-\gamma-PyPyHp-\beta-ImPy}$
	1490β) 5'-W G C G A G C W-3'	${\tt ImPyIm-\beta-ImPy-\gamma-ImPyHp-\beta-ImPy}$
	1501β) 5'-W G C G A C T W-3'	${\tt ImPyIm-\beta-PyHp-\gamma-PyImHp-\beta-ImPy}$
	1502β) 5'-W G C G A C A W-3'	${\tt ImPyIm-}\beta{\tt -PyPy-}\gamma{\tt -HpImHp-}\beta{\tt -ImPy}$
	1503β) 5'-W G C G A C G W-3'	${\tt ImPyIm-\beta-PyIm-\gamma-PyImHp-\beta-ImPy}$
35	1504β) 5'-W G C G A C C W-3'	${\tt ImPyIm-}\beta\hbox{-PyPy-}\gamma\hbox{-}{\tt ImImHp-}\beta\hbox{-}{\tt ImPy}$

	TABLE 157: 12-ring β-Hairpin Polyamides fo	or recognition of 8-bp 5'-WGCGSNNW-3'
	DNA sequence	aromatic amino acid sequence
	1505β) 5'-W G C G G T T W-3'	${\tt Im-\beta-ImImHpHp-\gamma-PyPyPy-\beta-ImPy}$
5	1506β) 5'-W G C G G T A W-3'	${\tt Im-\beta-ImImHpPy-\gamma-HpPyPy-\beta-ImPy}$
	1507β) 5'-W G C G G T G W-3'	${\tt Im-\beta-ImImHpIm-\gamma-PyPyPy-\beta-ImPy}$
	1508β) 5'-W G C G G T C W-3'	${\tt Im-\beta-ImImHpPy-\gamma-ImPyPy-\beta-ImPy}$
	1509β) 5'-W G C G G A T W-3'	${\tt Im-\beta-ImImPyHp-\gamma-PyHpPy-\beta-ImPy}$
	1510β) 5'-W G C G G A A W-3'	${\tt Im-\beta-ImImPyPy-\gamma-HpHpPy-\beta-ImPy}$
10	1511β) 5'-W G C G G A G W-3'	${\tt Im-\beta-ImImPyIm-\gamma-PyHpPy-\beta-ImPy}$
	1512β) 5'-W G C G G A C W-3'	${\tt Im-\beta-ImImPyPy-\gamma-ImHpPy-\beta-ImPy}$
	1513β) 5'-W G C G G G T W-3'	${\tt Im-\beta-ImImImHp-\gamma-PyPyPy-\beta-ImPy}$
	1514 β) 5'-W G C G G A W-3'	${\tt Im-\beta-ImImImPy-\gamma-HpPyPy-\beta-ImPy}$
	1515β) 5'-W G C G G C T W-3'	${\tt Im-\beta-ImImPyHp-\gamma-PyImPy-\beta-ImPy}$
15	1516β) 5'-W G C G G C A W-3'	${\tt Im-\beta-ImImPyPy-\gamma-HpImPy-\beta-ImPy}$
	1517β) 5′-W G C G C T T W-3'	${\tt ImPyIm-}\beta{\tt -HpHp-}\gamma{\tt -PyPyIm-}\beta{\tt -ImPy}$
	1518β) 5'-W G C G C T A W-3'	${\tt ImPyIm-\beta-HpPy-\gamma-HpPyIm-\beta-ImPy}$
	1519β) 5'-W G C G C T G W-3'	${\tt ImPyIm-\beta-HpIm-\gamma-PyPyIm-\beta-ImPy}$
	1520β) 5'-W G C G C T C W-3'	${\tt ImPyIm-\beta-HpPy-\gamma-ImPyIm-\beta-ImPy}$
20	1521 β) 5'-W G C G C A T W-3'	${\tt ImPyIm-}\beta\hbox{-PyHp-}\gamma\hbox{-PyHpIm-}\beta\hbox{-ImPy}$
	1522 β) 5'-W G C G C A A W-3'	${\tt ImPyIm-\beta-PyPy-\gamma-HpHpIm-\beta-ImPy}$
	1523β) 5'-W G C G C A G W-3'	${\tt ImPyIm-}\beta ext{-PyIm-}\gamma ext{-PyHpIm-}\beta ext{-ImPy}$
	1524 β) 5'-W G C G C A C W-3'	${\tt ImPyIm-}\beta\hbox{-}{\tt PyPy-}\gamma\hbox{-}{\tt ImHpIm-}\beta\hbox{-}{\tt ImPy}$
	1525β) 5′-W G C G C G T W-3'	ImPyIm-β-ImHp-γ-PyPyIm-β-ImPy
25	1526β) 5'-W G C G C G A W-3'	${\tt ImPyIm-\beta-ImPy-\gamma-HpPyIm-\beta-ImPy}$
	1527β) 5'-W G C G C C T W-3'	'ImPyIm-β-PyHp-γ-PyImIm-β-ImPy
	1528β) 5'-W G C G C C A W-3'	${ t ImPyIm}$ - ${ t eta}$ - ${ t PyPy}$ - ${ t \gamma}$ - ${ t HpImIm}$ - ${ t eta}$ - ${ t ImPy}$
	G65β) 5'-W G C G G G W-3'	Im-β-ImImIm-γ-РуРуРу-β-ImPy
	G66β) 5'-W G C G G C W-3'	Im-β-ImImImPy-γ-ImPyPy-β-ImPy
30	G67β) 5'-W G C G G C G W-3'	Im-β-ImImPyIm-γ-PyImPy-β-ImPy
	G68β) 5'-W G C G G C C W-3'	Im-β-ImImPyPy-γ-ImImPy-β-ImPy
	G69β) 5'-W G C G C G G W-3'	ImPyIm-β-ImIm-γ-PyPyIm-β-ImPy
	G70β) 5'-W G C G C G C W-3'	ImPyIm-β-ImPy-γ-ImPyIm-β-ImPy
	G71β) 5'-W G C G C C G W-3'	ImPyIm-β-PyIm-γ-PyImIm-β-ImPy
35	G72β) 5'-W G C G C C C W-3'	${\tt ImPyIm-\beta-PyPy-\gamma-ImImIm-\beta-ImPy}$

	TAB		recognition of 8-bp 5'-WGCTWNNW-3'
		DNA sequence	aromatic amino acid sequence
	1529β)	5'-W G C T T T T W-3'	ІтРу-β-НрНрНр-ү-РуРуРу-β-ІтРу
5	1530β)	· 5'-W G C T T T A W-3'	${\tt ImPy-}\beta{\tt -HpHpPy-}\gamma{\tt -HpPyPy-}\beta{\tt -ImPy}$
	1531β)	5'-W G C T T T G W-3'	${\tt ImPy-\beta-HpHpIm-\gamma-PyPyPy-\beta-ImPy}$
	1532β)	5'-W G C T T T C W-3'	${\tt ImPy-\beta-HpHpPy-\gamma-ImPyPy-\beta-ImPy}$
	1533β)	5'-W G C T T A T W-3'	${\tt ImPy-\beta-HpPyHp-\gamma-PyHpPy-\beta-ImPy}$
	1534β)	5'-W G C T T A A W-3'	ІтРу-β-НрРуРу-ү-НрНрРу-β-ІтРу
10	1535β)	5'-W G C T T A G W-3'	${\tt ImPy-\beta-HpPyIm-\gamma-PyHpPy-\beta-ImPy}$
	1536β)	5'-W G C T T A C W-3'	${\tt ImPy-\beta-HpPyPy-\gamma-ImHpPy-\beta-ImPy}$
	1537β)	5'-W G C T T G T W-3'	${\tt ImPy-\beta-HpImHp-\gamma-PyPyPy-\beta-ImPy}$
	1538β)	5'-W G C T T G A W-3'	${\tt ImPy-\beta-HpImPy-\gamma-HpPyPy-\beta-ImPy}$
	1539β)	5'-W G C T T G G W-3'	${\tt ImPy-\beta-HpImIm-\gamma-PyPyPy-\beta-ImPy}$
15	1540β)	5'-W G C T T G C W-3'	${\tt ImPy-\beta-HpImPy-\gamma-ImPyPy-\beta-ImPy}$
	1541β)	5'-W G C T T C T W-3'	${\tt ImPy-\beta-HpPyHp-\gamma-PyImPy-\beta-ImPy}$
	1542β)	5'-W G C T T C A W-3'	${\tt ImPy-\beta-HpPyPy-\gamma-HpImPy-\beta-ImPy}$
	1543β)	5'-W G C T T C G W-3'	${\tt ImPy-\beta-HpPyIm-\gamma-PyImPy-\beta-ImPy}$
	1544β)	5'-W G C T T C C W-3'	${\tt ImPy-\beta-HpPyPy-\gamma-ImImPy-\beta-ImPy}$
20	1545β)	5'-W G C T A T T W-3'	${\tt ImPy}\beta\hbox{-PyHpHp-}\gamma\hbox{-PyPyHp-}\beta\hbox{-ImPy}$
	1546β)	5'-W G C T A T A W-3'	${\tt ImPy-\beta-PyHpPy-\gamma-HpPyHp-\beta-ImPy}$
	1547β)	5'-W G C T A T G W-3'	$ImPy-\beta-PyHpIm-\gamma-PyPyHp-\beta-ImPy$
	1548β)	5'-W G C T A T C W-3'	${\tt ImPy-\beta-PyHpPy-\gamma-ImPyHp-\beta-ImPy}$
	1549β)	5'-W G C T A A T W-3'	ІтРу-β-РуРуНр-ү-РуНрНр-β-ІтРу
25	1550β)	5'-W G C T A A A W-3'	ІπРу-β-РуРуРу-γ-НрНрНр-β-ІπРу
	1551β)	5'-W G C T A A G W-3'	$ImPy-\beta-PyPyIm-\gamma-PyHpHp-\beta-ImPy$
	1552β)	5'-W G C T A A C W-3'	ІтРу-β-РуРуРу-ү-ІтНрНр-β-ІтРу
	1553β)	5'-W G C T A G T W-3'	ІшРу-β-РуІшНр-γ-РуРуНр-β-ІшРу
	1554β)	5'-W G C T A G A W-3'	$ImPy-\beta-PyImPy-\gamma-HpPyHp-\beta-ImPy$
30	1555β)	5'-W G C T A G G W-3'	ImPy-β-PyImIm-γ-PyPyHp-β-ImPy
	1556β)	5'-W G C T A G C W-3'	ImPy-β-PyImPy-γ-ImPyHp-β-ImPy
	1557β)	5'-W G C T A C T W-3'	ІπРу-β-РуРуНр-γ-РуІπНр-β-ІπРу
	1558β)	5'-W G C T A C A W-3'	ІmРу-β-РуРуРу-γ-НрІmНр-β-ІmРу
	1559β)	5'-W G C T A C G W-3'	ImPy-β-PyPyIm-γ-PyImHp-β-ImPy
35	1560β)	5'-W G C T A C C W-3'	ImPy-β-PyPyPy-γ-ImImHp-β-ImPy

	TABLE 159: 12-ring β-Hairpin Polyamides f	or recognition of 8-bp 5'-WGCTSNNW-3'.
	DNA sequence	aromatic amino acid sequence
	1561β) 5'-W G С Т G Т Т W-3'	${\tt ImPy-\beta-ImHpHp-\gamma-PyPyPy-\beta-ImPy}$
5	1562β) 5′-W G C T G T A W-3'	${\tt ImPy-\beta-ImHpPy-\gamma-HpPyPy-\beta-ImPy}$
	1563β) 5′-W G C T G T G W-3′	${\tt ImPy-\beta-ImHpIm-\gamma-PyPyPy-\beta-ImPy}$
	1564β) 5'-W G C T G T C W-3'	${\tt ImPy-\beta-ImHpPy-\gamma-ImPyPy-\beta-ImPy}$
	1565β) 5'-W G C T G A T W-3'	${\tt ImPy-\beta-ImPyHp-\gamma-PyHpPy-\beta-ImPy}$
	1566β) 5'-W G C T G A A W-3'	${\tt ImPy-\beta-ImPyPy-\gamma-HpHpPy-\beta-ImPy}$
10	1567β) 5'-W G C T G A G W-3'	${\tt ImPy-\beta-ImPyIm-\gamma-PyHpPy-\beta-ImPy}$
	1568β) 5'-W G C T G A C W-3'	${\tt ImPy-\beta-ImPyPy-\gamma-ImHpPy-\beta-ImPy}$
	1569β) 5'-W G C T G G T W-3'	${\tt ImPy-\beta-ImImHp-\gamma-PyPyPy-\beta-ImPy}$
	1570β) 5'-W G C T G G A W-3'	${\tt ImPy-\beta-ImImPy-\gamma-HpPyPy-\beta-ImPy}$
	1571β) 5'-W G C T G C T W-3'	${\tt ImPy-\beta-ImPyHp-\gamma-PyImPy-\beta-ImPy}$
15	1572β) 5'-W G C T G C A W-3'	${\tt ImPy-\beta-ImPyPy-\gamma-HpImPy-\beta-ImPy}$
	1573β) 5'-W G C T G G G W-3'	${\tt ImPy-\beta-ImImIm-\gamma-PyPyPy-\beta-ImPy}$
	1574 β) 5'-W G C T G G C W-3'	${\tt ImPy-\beta-ImImPy-\gamma-ImPyPy-\beta-ImPy}$
	1575β) 5'-W G C T G C G W-3'	${\tt ImPy-\beta-ImPyIm-\gamma-PyImPy-\beta-ImPy}$
	1576β) 5'-W G C T G C C W-3'	${\tt ImPy-\beta-ImPyPy-\gamma-ImImPy-\beta-ImPy}$
20	1577β) 5'-W G C T C T T W-3'	${\tt ImPy-\beta-PyHpHp-\gamma-PyPyIm-\beta-ImPy}$
	1578β) 5'-W G C T C T A W-3'	${ t ImPy-eta-PyHpPy-\gamma-HpPyIm-eta-ImPy}$
	1579В) 5'-W G С Т С Т G W-3'	${ t ImPy-eta- t PyHpIm-\gamma- t PyPyIm-eta- t ImPy}$
	1580β) 5'-W G C T C T C W-3'	${\tt ImPy-\beta-PyHpPy-\gamma-ImPyIm-\beta-ImPy}$
	1581β) 5′-W G C T C A T W-3'	$ImPy-\beta-PyPyHp-\gamma-PyHpIm-\beta-ImPy$
25	1582β) 5'-W G C T C A A W-3'	${\tt ImPy-\beta-PyPyPy-\gamma-HpHpIm-\beta-ImPy}$
	1583β) 5'-W G C T C A G W-3'	ΊmРy-β-РуРуІm-γ-РуНрІm-β-ІmРу
	1584β) 5'-W G C T C A C W-3'	$ImPy-\beta-PyPyPy-\gamma-ImHpIm-\beta-ImPy$
	1585β) 5′-W G C T C G T W-3′	$ImPy-\beta-PyImHp-\gamma-PyPyIm-\beta-ImPy$
	1586β) 5'-W G C T C G A W-3'	$ImPy-\beta-PyImPy-\gamma-HpPyIm-\beta-ImPy$
30	1587β) 5′-w G C T C C T w-3′	$ImPy-\beta-PyPyHp-\gamma-PyImIm-\beta-ImPy$
	1588β) 5′-W G C T C C A W-3′	ImPy-β-РуРуРу-γ-НрImIm-β-ImPy
	1589β) 5'-W G C T C G G W-3'	ImPy-β-PyImIm-γ-PyPyIm-β-ImPy
	1590β) 5'-W G C T C G C W-3'	ImPy-β-PyImPy-γ-ImPyIm-β-ImPy
	1591β) 5'-W G C T C C G W-3'	ImPy-β-PyPyIm-γ-PyImIm-β-ImPy
35	1592β) 5'-W G C T C C W-3'	ImPy-β-PyPyPy-γ-ImImIm-β-ImPy

	TABLE 160: 12-ring β-Hairpin Polyamides for	recognition of 8-bp 5'-WGCAWNNW-3'
	DNA sequence	aromatic amino acid sequence
	1593β) 5'-W G C A T T T W-3'	ІтРу-β-НрНрНр-ү-РуРуРу-β-ІтРу
5	1594β) 5'-W G C A T T A W-3'	ІтРу-β-НрНрРу-ү-НрРуРу-β-ІтРу
	1595β) 5'-W G C A T T G W-3'	ІтРу-β-НрНрІт-ү-РуРуРу-β-ІтРу
	1596β) 5'-W G C A T T C W-3'	ІтРу-β-НрНрРу-ү-ІтРуРу-β-ІтРу
	1597β) 5'-W G C A T A T W-3'	ІтРу-β-НрРуНр-ү-РуНрРу-β-ІтРу
	1598β) 5'-W G C A T A A W-3'	ІтРу-β-НрРуРу-ү-НрНрРу-β-ІтРу
10	1599β) 5'-W G C A T A G W-3'	ІтРу-β-НрРуІт-ү-РуНрРу-β-ІтРу
	1600β) 5'-W G C A T A C W-3'	${\tt ImPy-\beta-HpPyPy-\gamma-ImHpPy-\beta-ImPy}$
	1601β) 5'-W G C A T G T W-3'	${\tt ImPy-}\beta{\tt -HpImHp-}\gamma{\tt -PyPyPy-}\beta{\tt -ImPy}$
	1602β) 5'-W G C A T G A W-3'	${\tt ImPy-\beta-HpImPy-\gamma-HpPyPy-\beta-ImPy}$
	1603β) 5'-W G C A T G G W-3'	${\tt ImPy-\beta-HpImIm-\gamma-PyPyPy-\beta-ImPy}$
15	1604β) 5'-W G C A T G C W-3'	${\tt ImPy-\beta-HpImPy-\gamma-ImPyPy-\beta-ImPy}$
	1605β) 5'-W G C A T C T W-3'	${\tt ImPy-\beta-HpPyHp-\gamma-PyImPy-\beta-ImPy}$
	1606β) 5'-W G C A T C A W-3'	${\tt ImPy-\beta-HpPyPy-\gamma-HpImPy-\beta-ImPy}$
	1607β) 5'-W G C A T C G W-3'	${\tt ImPy-\beta-HpPyIm-\gamma-PyImPy-\beta-ImPy}$
	1608β) 5'-W G C A T C C W-3'	${\tt ImPy-\beta-HpPyPy-\gamma-ImImPy-\beta-ImPy}$
20	1609β) 5'-W G C A A T T W-3'	${\tt ImPy-\beta-PyHpHp-\gamma-PyPyHp-\beta-ImPy}$
	1610β) 5'-W G C A A T A W-3'	${\tt ImPy-\beta-PyHpPy-\gamma-HpPyHp-\beta-ImPy}$
	1611β) 5'-W G C A A T G W-3'	${\tt ImPy-\beta-PyHpIm-\gamma-PyPyHp-\beta-ImPy}$
	1612β) 5'-W G C A A T C W-3'	${\tt ImPy-\beta-PyHpPy-\gamma-ImPyHp-\beta-ImPy}$
	1613β) 5'-W G C A A A T W-3'	${\tt ImPy-\beta-PyPyHp-\gamma-PyHpHp-\beta-ImPy}$
25	1614β) 5'-W G C A A A A W-3'	${\tt ImPy-\beta-PyPyPy-\gamma-HpHpHp-\beta-ImPy}$
	1615β) 5'-W G C A A A G W-3'	${\tt ImPy-\beta-PyPyIm-\gamma-PyHpHp-\beta-ImPy}$
	1616β) 5'-W G C A A A C W-3'	${\tt ImPy-\beta-PyPyPy-\gamma-ImHpHp-\beta-ImPy}$
	1617β) 5'-W G C A A G T W-3'	${\tt ImPy-\beta-PyImHp-\gamma-PyPyHp-\beta-ImPy}$
	1618β) 5'-W G C A A G A W-3'	${\tt ImPy-\beta-PyImPy-\gamma-HpPyHp-\beta-ImPy}$
30	1619β) 5'-W G C A A G G W-3'	${\tt ImPy-\beta-PyImIm-\gamma-PyPyHp-\beta-ImPy}$
	1620β) 5'-W G C A A G C W-3'	${\tt ImPy-\beta-PyImPy-\gamma-ImPyHp-\beta-ImPy}$
	1621β) 5'-W G C A A C T W-3'	${\tt ImPy-}\beta\hbox{-PyPyHp-}\gamma\hbox{-PyImHp-}\beta\hbox{-ImPy}$
	1622β) 5'-W G C A A C A W-3'	${\tt ImPy-\beta-PyPyPy-\gamma-HpImHp-\beta-ImPy}$
	1623β) 5'-W G C A A C G W-3'	${\tt ImPy-\beta-PyPyIm-\gamma-PyImHp-\beta-ImPy}$
35	1624β) 5'-W G C A A C C W-3'	${\tt ImPy-\beta-PyPyPy-\gamma-ImImHp-\beta-ImPy}$

	TABLE 161: 12-ring β-Hairpin Polyamides for	r recognition of 8-bp 5'-WGCASNNW-3'
	DNA sequence	aromatic amino acid sequence
	1625β) 5'-W G C A G T T W-3'	${\tt ImPy-\beta-ImHpHp-\gamma-PyPyPy-\beta-ImPy}$
5	1626 β) \cdot 5'-W G C A G T A W-3'	${\tt ImPy-}\beta\hbox{-}{\tt ImHpPy-}\gamma\hbox{-}{\tt HpPyPy-}\beta\hbox{-}{\tt ImPy}$
	1627β) 5'-W G C A G T G W-3'	${\tt ImPy-\beta-ImHpIm-\gamma-PyPyPy-\beta-ImPy}$
	1628β) 5'-W G C A G T C W-3'	${\tt ImPy-\beta-ImHpPy-\gamma-ImPyPy-\beta-ImPy}$
	1629β) 5'-W G C A G A T W-3'	${\tt ImPy-\beta-ImPyHp-\gamma-PyHpPy-\beta-ImPy}$
	1630β) 5'-W G C A G A A W-3'	${\tt ImPy-\beta-ImPyPy-\gamma-HpHpPy-\beta-ImPy}$
10	1631β) 5'-W G C A G A G W-3'	${\tt ImPy-}\beta{\tt -ImPyIm-}\gamma{\tt -PyHpPy-}\beta{\tt -ImPy}$
٠.	1632β) 5'-W G C A G A C W-3'	${\tt ImPy-\beta-ImPyPy-\gamma-ImHpPy-\beta-ImPy}$
	1633β) 5'-W G C A G G T W-3'	${\tt ImPy-\beta-ImImHp-\gamma-PyPyPy-\beta-ImPy}$
	1634 eta) 5'-W G C A G G A W-3'	${\tt ImPy-\beta-ImImPy-\gamma-HpPyPy-\beta-ImPy}$
	1635β) 5'-W G C A G C T W-3'	${\tt ImPy-}\beta{\tt -ImPyHp-}\gamma{\tt -PyImPy-}\beta{\tt -ImPy}$
15	1636β) 5'-W G C A G C A W-3'	${\tt ImPy-\beta-ImPyPy-\gamma-HpImPy-\beta-ImPy}$
	1637β) 5'-W G C A G G G W-3'	${\tt ImPy-\beta-ImImIm-\gamma-PyPyPy-\beta-ImPy}$
	1638β) 5'-W G C A G G C W-3'	ImPy-\beta-ImImPy-\gamma-ImPyPy-\beta-ImPy
	1639β) 5'-W G C A G C G W-3'	${\tt ImPy-\beta-ImPyIm-\gamma-PyImPy-\beta-ImPy}$
	1640β) 5'-W G C A G C C W-3'	ImPy-β-ImPyPy-γ-ImImPy-β-ImPy
20	1641β) 5'-W G C A C T T W-3'	${\tt ImPy-\beta-PyHpHp-\gamma-PyPyIm-\beta-ImPy}$
	1642β) 5'-W G C A C T A W-3'	${\tt ImPy-\beta-PyHpPy-\gamma-HpPyIm-\beta-ImPy}$
	1643β) 5'-W G C A C T G W-3'	${\tt ImPy-\beta-PyHpIm-\gamma-PyPyIm-\beta-ImPy}$
	1644β) 5'-W G C A C T C W-3'	${\tt ImPy-\beta-PyHpPy-\gamma-ImPyIm-\beta-ImPy}$
	1645β) 5'-W G C A C A T W-3'	${\tt ImPy-\beta-PyPyHp-\gamma-PyHpIm-\beta-ImPy}$
25	1646β) 5'-W G C A C A A W-3'	${ t ImPy-eta-PyPyPy-\gamma-HpHpIm-eta-ImPy}$
	1647β) 5'-W G C A C A G W-3'	${\tt ImPy-\beta-PyPyIm-\gamma-PyHpIm-\beta-ImPy}$
	1648β) 5'-W G C A C A C W-3'	${\tt ImPy-\beta-PyPyPy-\gamma-ImHpIm-\beta-ImPy}$
	1649β) 5'-W G C A C G T W-3'	${\tt ImPy-}eta-{\tt PyImHp-}\gamma-{\tt PyPyIm-}eta-{\tt ImPy}$
	1650β) 5'-W G C A C G A W-3'	${\tt ImPy-}\beta ext{-PyImPy-}\gamma ext{-HpPyIm-}\beta ext{-ImPy}$
30	1651β) 5'-W G C A C C T W-3'	${\tt ImPy-}eta-{\tt PyPyHp-}\gamma-{\tt PyImIm-}eta-{\tt ImPy}$
	1652β) 5'-W G C A C C A W-3'	$ImPy-\beta-PyPyPy-\gamma-HpImIm-\beta-ImPy$
	1653β) 5'-W G C A C G G W-3'	ImPy-β-PyImIm-γ-PyPyIm-β-ImPy
	1654β) 5'-W G C A C G C W-3'	ImPy-β-PyImPy-γ-ImPyIm-β-ImPy
	1655β) 5'-W G C A C C G W-3'	ImPy-β-PyPyIm-γ-PyImIm-β-ImPy
35	1656β) 5'-W G C A C C C W-3'	ImPy-β-PyPyPy-γ-ImImIm-β-ImPy

	TABLE 162: 12-ring β-Hairpin Polyamides for	recognition of 8-bp 5'-WGCCWNNW-3'
	DNA sequence	aromatic amino acid sequence
	1657β) 5'-W G C C T T T W-3'	${\tt ImPyPy-}\beta{\tt -HpHp-}\gamma{\tt -PyPy-}\beta{\tt -ImImPy}$
5	1658β) 5'-W G C C T T A W-3'	${\tt ImPyPy-\beta-HpPy-\gamma-HpPy-\beta-ImImPy}$
	1659β) 5′-W G C C T T G W-3'	${\tt ImPyPy-\beta-HpIm-\gamma-PyPy-\beta-ImImPy}$
	1660β) 5′-W G C C T T C W-3'	${\tt ImPyPy-\beta-HpPy-\gamma-ImPy-\beta-ImImPy}$
	1661β) 5'-W G C C Т A Т W-3'	${\tt ImPyPy-\beta-PyHp-\gamma-PyHp-\beta-ImImPy}$
	1662β) 5'-W G C C T A A W-3'	${\tt ImPyPy-\beta-PyPy-\gamma-HpHp-\beta-ImImPy}$
10	1663β) 5'-W G C C T A G W-3'	${\tt ImPyPy-\beta-PyIm-\gamma-PyHp-\beta-ImImPy}$
	1664β) 5'-W G C C T A C W-3'	${\tt ImPyPy-\beta-PyPy-\gamma-ImHp-\beta-ImImPy}$
	1665β) 5'-W G C C T G T W-3'	${\tt ImPyPy-\beta-ImHp-\gamma-PyPy-\beta-ImImPy}$
	1666β) 5′-W G C C T G A W-3'	${\tt ImPyPy-\beta-ImPy-\gamma-HpPy-\beta-ImImPy}$
	1667β) 5′-W G C C T G G W-3'	${\tt ImPyPy-\beta-ImIm-\gamma-PyPy-\beta-ImImPy} \cdot $
15	1668β) 5′-W G C C T G C W-3′	${\tt ImPyPy-\beta-ImPy-\gamma-ImPy-\beta-ImImPy}$
	1669β) 5′-W G C C T C T W-3′	${\tt ImPyPy-\beta-PyHp-\gamma-PyIm-\beta-ImImPy}$
	1670β) 5′-W G C C T C A W-3'	${\tt ImPyPy-\beta-PyPy-\gamma-HpIm-\beta-ImImPy}$
	1671β) 5′-w ссстсс w-з '	${\tt ImPyPy-\beta-PyIm-\gamma-PyIm-\beta-ImImPy}$
	1672β) 5′-W G C C T C C W-3′	${\tt ImPyPy-\beta-PyPy-\gamma-ImIm-\beta-ImImPy}$
20	1673β) 5′-W G C С A T T W-3′	${\tt ImPyPy-\beta-HpHp-\gamma-PyPy-\beta-ImImPy}$
	1674β) 5′-W G C C A T A W-3'	${\tt ImPyPy-\beta-HpPy-\gamma-HpPy-\beta-ImImPy}$
	1675β) 5′-W G C C A T G W-3'	${\tt ImPyPy-\beta-HpIm-\gamma-PyPy-\beta-ImImPy}$
	1676β) 5′-W G C C A T C W-3'	${\tt ImPyPy-\beta-HpPy-\gamma-ImPy-\beta-ImImPy}$
	1677β) 5'-W G C C A A T W-3'	${\tt ImPyPy-\beta-PyHp-\gamma-PyHp-\beta-ImImPy}$
25	1678β) 5'-W G C C A A A W-3'	${\tt ImPyPy-\beta-PyPy-\gamma-HpHp-\beta-ImImPy}$
	1679β) 5'-W G C C A A G W-3'	$ImPyPy-\beta-PyIm-\gamma-PyHp-\beta-ImImPy$
	1680β) 5'-W G C C A A C W-3'	${\tt ImPyPy-\beta-PyPy-\gamma-ImHp-\beta-ImImPy}$
	1681β) 5'-W G C C A G T W-3'	$ImPyPy-\beta-ImHp-\gamma-PyPy-\beta-ImImPy$
	1682β) 5'-W G C C A G A W-3'	ImPyPy-β-ImPy-γ-HpPy-β-ImImPy
30	1683β) 5'-W G C C A G G W-3'	ImPyPy-β-ImIm-γ-PyPy-β-ImImPy
	1684β) 5'-W G C C A G C W-3'	${\tt ImPyPy-eta-ImPy-\gamma-ImPy-eta-ImImPy}$
	1685β) 5'-W G C C A C T W-3'	$ImPyPy-\beta-PyHp-\gamma-PyIm-\beta-ImImPy$
	1686β) 5'-W G C C A C A W-3'	ImPyPy-β-PyPy-γ-HpIm-β-ImImPy
	1687β) 5'-W G C C A C G W-3'	ImPyPy-β-PyIm-γ-PyIm-β-ImImPy
35	1688β) 5'-W G C C A C C W-3'	ImPyPy-β-PyPy-γ-ImIm-β-ImImPy

_	TABLE 163: 12-ring β-Hairpin Polyamides	for recognition of 8-bp 5'-WGCCSNNW-3'
_	DNA sequence	aromatic amino acid sequence
	1689β) 5′-W G C C G T T W-3'	${\tt ImPy-\beta-ImHpHp-\gamma-PyPy-\beta-ImImPy}$
5	1690β) 5'-W G C C G T A W-3'	${\tt ImPy-\beta-ImHpPy-\gamma-HpPy-\beta-ImImPy}$
	1691β) 5'-W G C C G T G W-3'	${\tt ImPy-\beta-ImHpIm-\gamma-PyPy-\beta-ImImPy}$
	1692β) 5′-W G C C G T C W-3′	${\tt ImPy-\beta-ImHpPy-\gamma-ImPy-\beta-ImImPy}$
	1693β) 5'-W G C C G A T W-3'	${\tt ImPy-\beta-ImPyHp-\gamma-PyHp-\beta-ImImPy}$
	1694 β) 5'-W G C C G A A W-3'	${\tt ImPy-\beta-ImPyPy-\gamma-HpHp-\beta-ImImPy}$
)	1695β) 5'-W G C C G A G W-3'	${\tt ImPy-\beta-ImPyIm-\gamma-PyHp-\beta-ImImPy}$
	1696β) 5'-W G C C G A C W-3'	${\tt ImPy-\beta-ImPyPy-\gamma-ImHp-\beta-ImImPy}$
	1697β) 5′-W G C C G G T W-3'	${\tt ImPy-\beta-ImImHp-\gamma-PyPy-\beta-ImImPy}$
	1698β) 5'-W G C C G G A W-3'	${\tt ImPy-\beta-ImImPy-\gamma-HpPy-\beta-ImImPy}$
	1699β) 5'-W G C C G C T W-3'	${\tt ImPy-\beta-ImPyHp-\gamma-PyIm-\beta-ImImPy}$
5	1700β) 5'-W G C C G C A W-3'	${\tt ImPy-\beta-ImPyPy-\gamma-HpIm-\beta-ImImPy}$
	1701β) 5′-W G C C С Т Т W-3′	${\tt ImPy-\beta-PyHpHp-\gamma-Py-\beta-ImImImPy}$
	1702β) 5'-W G C C C T A W-3'	${\tt ImPy-\beta-PyHpPy-\gamma-Hp-\beta-ImImImPy}$
	1703β) 5'-W G C C C T G W-3'	${\tt ImPy-\beta-PyHpIm-\gamma-Py-\beta-ImImImPy}$
	1704β) 5′-W G C C С Т С W-3′	${\tt ImPy-\beta-PyHpPy-\gamma-Im-\beta-ImImImPy}$
0	1705β) 5'-W G C C C A T W-3'	${\tt ImPy-\beta-PyPyHp-\gamma-Py-\beta-ImImImPy}$
	1706β) 5'-W G C C C A A W-3'	${\tt ImPy-\beta-PyPyPy-\gamma-Hp-\beta-ImImImPy}$
	1707β) 5'-W G C C C A G W-3'	${\tt ImPy-\beta-PyPyIm-\gamma-Py-\beta-ImImImPy}$
	1708β) 5'-W G C C C A C W-3'	${\tt ImPy-\beta-PyPyPy-\gamma-Im-\beta-ImImImPy}$
	1709β) 5'-W G C C G T W-3'	${\tt ImPy-\beta-PyImHp-\gamma-Py-\beta-ImImImPy}$
:5	1710β) 5'-W G C C C G A W-3'	${\tt ImPy-\beta-PyImPy-\gamma-Hp-\beta-ImImImPy}$
	G73β) 5'-W G C C G G W-3'	'ImPy-β-ImImIm-γ-PyPy-β-ImImPy
	G74 β) 5'-W G C C G G C W-3'	${\tt ImPy-\beta-ImImPy-\gamma-ImPy-\beta-ImImPy}$
	G75β) 5'-W G C C G C G W-3'	${\tt ImPy-\beta-ImPyIm-\gamma-PyIm-\beta-ImImPy}$
	G76β) 5′-W G C C G C C W-3'	${\tt ImPy-\beta-ImPyPy-\gamma-ImIm-\beta-ImImPy}$
30	G77β) 5′-W G C C C G G W-3'	${\tt ImPy-\beta-PyImIm-\gamma-Py-\beta-ImImImPy}$
	G78β) 5'-W G C C G C W-3'	${\tt ImPy-\beta-PyImPy-\gamma-Im-\beta-ImImImPy}$

	TABLE 164: 12-ring β-Hairpin Polyamides fo	or recognition of 8-bp 5'-WGAGWNNW-3'
_	DNA sequence	aromatic amino acid sequence
	1713β) 5'-W G A G T T T W-3'	${\tt Im-\beta-ImHpHpHp-\gamma-PyPyPyPy-\beta-Py}$
	1714β) 5'-W G A G T T A W-3'	${\tt Im-\beta-ImHpHpPy-\gamma-HpPyPyPy-\beta-Py}$
5	1715 eta) 5'-W G A G T T G W-3'	${\tt Im-\beta-ImHpHpIm-\gamma-PyPyPyPy-\beta-Py}$
	1716β) 5'-W G A G T T C W-3'	${\tt Im-\beta-ImHpHpPy-\gamma-ImPyPyPy-\beta-Py}$
	1717 eta) 5'-W G A G T A T W-3'	${\tt Im-\beta-ImHpPyHp-\gamma-PyHpPyPy-\beta-Py}$
	1718β) 5'-W G A G T A A W-3'	${\tt Im-\beta-ImHpPyPy-\gamma-HpHpPyPy-\beta-Py}$
	1719β) 5'-W G A G T A G W-3'	${\tt Im-\beta-ImHpPyIm-\gamma-PyHpPyPy-\beta-Py}$
10	1720β) 5'-W G A G T A C W-3'	${\tt Im-\beta-ImHpPyPy-\gamma-ImHpPyPy-\beta-Py}$
	1721 β) 5'-W G A G T G T W-3'	${\tt Im-\beta-ImHpImHp-\gamma-PyPyPyPy-\beta-Py}$
	1722β) 5'-W G A G T G A W-3'	${\tt Im-\beta-ImHpImPy-\gamma-HpPyPyPy-\beta-Py}$
	1723β) 5'-W G A G T G G W-3'	${\tt Im-\beta-ImHpImIm-\gamma-PyPyPyPy-\beta-Py}$
	1724β) 5'-W G A G T G C W-3'	${\tt Im-\beta-ImHpImPy-\gamma-ImPyPyPy-\beta-Py}$
15	1725β) 5'-W G A G T C T W-3'	${\tt Im-\beta-ImHpPyHp-\gamma-PyImPyPy-\beta-Py}$
	1726β) 5'-W G A G T C A W-3'	${\tt Im-\beta-ImHpPyPy-\gamma-HpImPyPy-\beta-Py}$
	1727β) 5'-W G A G T C G W-3'	${\tt Im-\beta-ImHpPyIm-\gamma-PyImPyPy-\beta-Py}$
	1728β) 5'-W G A G T C C W-3'	${\tt Im-\beta-ImHpPyPy-\gamma-ImImPyPy-\beta-Py}$
	1729β) 5'-W G A G A T T W-3'	${\tt Im-\beta-ImPyHpHp-\gamma-PyPyHpPy-\beta-Py}$
20	1730β) 5'-W G A G A T A W-3'	${\tt Im-\beta-ImPyHpPy-\gamma-HpPyHpPy-\beta-Py}$
	1731β) 5'-W G A G A T G W-3'	${\tt Im-}\beta\hbox{-}{\tt ImPyHpIm-}\gamma\hbox{-}{\tt PyPyHpPy-}\beta\hbox{-}{\tt Py}$
	1732β) 5'-W G A G A T C W-3'	${\tt Im-\beta-ImPyHpPy-\gamma-ImPyHpPy-\beta-Py}$
	1733β) 5'-W G A G A A T W-3'	Im-β-ImРуРуНр-γ-РуНрНрРу-β-Ру
	1734β) 5'-W G A G A A A W-3'	${\tt Im-\beta-ImPyPyPy-\gamma-HpHpHpPy-\beta-Py}$
25	1735β) 5'-W G A G A A G W-3'	${\tt Im-\beta-ImPyPyIm-\gamma-PyHpHpPy-\beta-Py}$
	1736β) 5'-W G A G A A C W-3'	`Im-β-ImРуРуРу-γ-ImНpНpРy-β-Ру
	1737β) 5′-W G A G A G T W-3'	${\tt Im-\beta-ImPyImHp-\gamma-PyPyHpPy-\beta-Py}$
	1738β) 5'-W G A G A G A W-3'	${\tt Im-\beta-ImPyImPy-\gamma-HpPyHpPy-\beta-Py}$
	1739β) 5'-W G A G A G G W-3'	${\tt Im-\beta-ImPyImIm-\gamma-PyPyHpPy-\beta-Py}$
30	1740β) 5′-W G A G A G C W-3'	${\tt Im-\beta-ImPyImPy-\gamma-ImPyHpPy-\beta-Py}$
	1741β) 5'-W G A G A C T W-3'	${\tt Im-\beta-ImPyPyHp-\gamma-PyImHpPy-\beta-Py}$
	1742β) 5'-W G A G A C A W-3'	${\tt Im-\beta-ImPyPyPy-\gamma-HpImHpPy-\beta-Py}$
	1743β) 5'-W G A G A C G W-3'	${\tt Im-\beta-ImPyPyIm-\gamma-PyImHpPy-\beta-Py}$
	1744 β) 5'-W G A G A C C W-3'	${\tt Im-\beta-ImPyPyPy-\gamma-ImImHpPy-\beta-Py}$

-	TABLE 165: 12-ring β-Hairpin Polyamides f	or recognition of 8-bp 5'-WGAGSNNW-3'
_	DNA sequence	aromatic amino acid sequence
	1745β) 5'-W G A G G T T W-3'	${\tt Im-\beta-ImImHpHp-\gamma-PyPyPyPy-\beta-Py}$
5	1746β) 5'-W G A G G T A W-3'	${\tt Im-\beta-ImImHpPy-\gamma-HpPyPyPy-\beta-Py}$
	1747β) 5'-W G A G G T G W-3'	${\tt Im-\beta-ImImHpIm-\gamma-PyPyPyPy-\beta-Py}$
	1748β) 5'-W G A G G T C W-3'	${\tt Im-\beta-ImImHpPy-\gamma-ImPyPyPy-\beta-Py}$
	1749β) 5'-W G A G G A T W-3'	${\tt Im-\beta-ImImPyHp-\gamma-PyHpPyPy-\beta-Py}$
	1750β) 5'-W G A G G A A W-3'	${\tt Im-\beta-ImImPyPy-\gamma-HpHpPyPy-\beta-Py}$
10	1751β) 5'-W G A G G A G W-3'	${\tt Im-\beta-ImImPyIm-\gamma-PyHpPyPy-\beta-Py}$
	1752β) 5'-W G A G G A C W-3'	${\tt Im-\beta-ImImPyPy-\gamma-ImHpPyPy-\beta-Py}$
	1753β) 5'-W G A G G G T W-3'	${\tt Im-\beta-ImImImHp-\gamma-PyPyPyPy-\beta-Py}$
	1754β) 5'-W G A G G G A W-3'	${\tt Im-\beta-ImImImPy-\gamma-HpPyPyPy-\beta-Py}$
	1755β) 5'-W G A G G C T W-3'	${\tt Im-\beta-ImImPyHp-\gamma-PyImPyPy-\beta-Py}$
15	1756β) 5'-W G A G G C A W-3'	${\tt Im-\beta-ImImPyPy-\gamma-HpImPyPy-\beta-Py}$
	1757β) 5'-W G A G C T T W-3'	${\tt Im-\beta-ImPyHpHp-\gamma-PyPyImPy-\beta-Py}$
	1758β) 5'-W G A G C T A W-3'	${\tt Im-\beta-ImPyHpPy-\gamma-HpPyImPy-\beta-Py}$
	1759β) 5'-W G A G C T G W-3'	${\tt Im-\beta-ImPyHpIm-\gamma-PyPyImPy-\beta-Py}$
	1760β) 5'-W G A G C T C W-3'	${\tt Im-\beta-ImPyHpPy-\gamma-ImPyImPy-\beta-Py}$
20	1761β) 5'-W G A G C A T W-3'	${\tt Im-\beta-ImPyPyHp-\gamma-PyHpImPy-\beta-Py}$
	1762β) 5'-W G A G C A A W-3'	${\tt Im-\beta-ImPyPyPy-\gamma-HpHpImPy-\beta-Py}$
	1763β) 5'-W G A G C A G W-3'	${\tt Im-\beta-ImPyPyIm-\gamma-PyHpImPy-\beta-Py}$
	1764β) 5'-W G A G C A C W-3'	${\tt Im}$ - ${\tt B}$ - ${\tt Im}$ - ${\tt Py}$ - ${\tt Py}$ - ${\tt Y}$ - ${\tt Im}$ - ${\tt Py}$ - ${\tt Py}$
	1765 β) 5'-W G A G C G T W-3'	${\tt Im} extstyle - eta extst$
25	1766β) 5'-W G A G C G A W-3'	Im-β-ImPyImPy-γ-HpPyImPy-β-Py
	1767β) 5'-W G A G C C T W-3'	'Im-β-ImPyPyHp-γ-PyImImPy-β-Py
	1768β) 5'-W G A G C C A W-3'	Im-β-ImPyPyPy-γ-HpImImPy-β-Py
	1769β) 5'-W G A G G G W-3'	Im-β-ImImImIm-γ-РуРуРуРу-β-Ру
	1770β) 5'-W G A G G G C W-3'	Im-β-ImImImPy-γ-ImPyPyPy-β-Py
30	1771β) 5'-W G A G G C G W-3'	Im-β-ImImPyIm-γ-PyImPyPy-β-Py
	1772β) 5'-W G A G G C C W-3'	Im-β-ImImPyPy-γ-ImImPyPy-β-Py
	1773β) 5'-W G A G C G G W-3'	Im-β-ImPyImIm-γ-PyPyImPy-β-Py
	1774β) 5'-W G A G C G C W-3'	Im-β-ImPyImPy-γ-ImPyImPy-β-Py
	1775β) 5'-W G A G C C G W-3'	Im-β-ImPyPyIm-γ-PyImImPy-β-Py
35	1776β) 5'-W G A G C C C W-3'	Im-β-ImPyPyPy-γ-ImImImPy-β-Py

	TAB	LE 166: 12-ring β-Hairpin Polyamides for the	recognition of 8-bp 5'-WGATWNNW-3'
		DNA sequence	aromatic amino acid sequence
	1777β)	5'-W G A T T T T W-3'	ImPy-β-HpHpHp-γ-РуРуРу-β-HpPy
5	1778β) -	5'-W G A T T T A W-3'	ІмРу-β-НрНрРу-γ-НрРуРу-β-НрРу
	1779β)	5'-W G A T T T G W-3'	${\tt ImPy-}\beta{\tt -HpHpIm-}\gamma{\tt -PyPyPy-}\beta{\tt -HpPy}$
	1780β)	5'-W G A T T T C W-3'	${\tt ImPy-}\beta{\tt -HpHpPy-}\gamma{\tt -ImPyPy-}\beta{\tt -HpPy}$
	1781β)	5'-W G A T T A T W-3'	${\tt ImPy-}\beta{\tt -HpPyHp-}\gamma{\tt -PyHpPy-}\beta{\tt -HpPy}$
	1782β)	5'-W G A T T A A W-3'	ІmРу-β-HpРуРу-γ-HpHpРу-β-HpРу
10	1783β)	5'-W G A T T A G W-3'	${\tt ImPy-}\beta{\tt -HpPyIm-}\gamma{\tt -PyHpPy-}\beta{\tt -HpPy}$
	1784β)	5'-W G A T T A C W-3'	${\tt ImPy-\beta-HpPyPy-\gamma-ImHpPy-\beta-HpPy}$
	1785β)	5'-W G A T T G T W-3'	${\tt ImPy-}\beta{\tt -HpImHp-}\gamma{\tt -PyPyPy-}\beta{\tt -HpPy}$
	1786β)	5'-W G A T T G A W-3'	${\tt ImPy-}\beta{\tt -HpImPy-}\gamma{\tt -HpPyPy-}\beta{\tt -HpPy}$
	1787β)	5'-W G A T T G G W-3'	${\tt ImPy-\beta-HpImIm-\gamma-PyPyPy-\beta-HpPy}$
15	1788β)	5'-W G A T T G C W-3'	${\tt ImPy-}\beta{\tt -HpImPy-}\gamma{\tt -ImPyPy-}\beta{\tt -HpPy}$
	1789β)	5'-W G A T T C T W-3'	${\tt ImPy-}\beta{\tt -HpPyHp-}\gamma{\tt -PyImPy-}\beta{\tt -HpPy}$
	1790β)	5'-W G A T T C A W-3'	${\tt ImPy-\beta-HpPyPy-\gamma-HpImPy-\beta-HpPy}$
	1791β)	5'-W G A T T C G W-3'	${\tt ImPy-\beta-HpPyIm-\gamma-PyImPy-\beta-HpPy}$
	1792β)	5'-W G A T T C C W-3'	${\tt ImPy-\beta-HpPyPy-\gamma-ImImPy-\beta-HpPy}$
20	1793β)	5'-W G A T A T T W-3'	${\tt ImPy-}\beta ext{-}{\tt PyHpHp-}\gamma ext{-}{\tt PyPyHp-}\beta ext{-}{\tt HpPy}$
	1794β)	5'-W G A T A T A W-3'	ІмРу-β-РуНрРу-ү-НрРуНр-β-НрРу
	1795β)	5'-W G A T A T G W-3'	${\tt ImPy-\beta-PyHpIm-\gamma-PyPyHp-\beta-HpPy}$
	1796β)	5'-W G A T A T C W-3'	${\tt ImPy-\beta-PyHpPy-\gamma-ImPyHp-\beta-HpPy}$
	1797β)	5'-W G A T A A T W-3'	ІмРу-β-РуРуНр-ү-РуНрНр-β-НрРу
25	1798β)	5'-W G A T A A A W-3'	ІмРу-β-РуРуРу-ү-НрНрНр-β-НрРу
	1799β)	5'-W G A T A A G W-3'	·ІмРу-β-РуРуІм-ү-РуНрНр-β-НрРу
	1800β)	5'-W G A T A A C W-3'	ІмРу-β-РуРуРу-ү-ІмНрНр-β-НрРу
	1801β)	5'-W G A T A G T W-3'	ІтРу-β-РуІтНр-ү-РуРуНр-β-НрРу
	1802β)	5'-W G A T A G A W-3'	ІтРу-β-РуІтРу-ү-НрРуНр-β-НрРу
30	1803β)	5'-W G A T A G G W-3'	${\tt ImPy-\beta-PyImIm-\gamma-PyPyHp-\beta-HpPy}$
	1804β)	5'-W G A T A G C W-3'	${\tt ImPy-\beta-PyImPy-\gamma-ImPyHp-\beta-HpPy}$
	1805β)	5'-W G A T A C T W-3'	${\tt ImPy-\beta-PyPyHp-\gamma-PyImHp-\beta-HpPy}$
	1806β)	5'-W G A T A C A W-3'	${\tt ImPy-}\beta\hbox{-PyPyPy-}\gamma\hbox{-HpImHp-}\beta\hbox{-HpPy}$
	1807β)	5'-W G A T A C G W-3'	${\tt ImPy-}\beta\hbox{-}{\tt PyPyIm-}\gamma\hbox{-}{\tt PyImHp-}\beta\hbox{-}{\tt HpPy}$
35	1808β)	5'-W G A T A C C W-3'	${\tt ImPy-}\beta\hbox{-PyPyPy-}\gamma\hbox{-}{\tt ImImHp-}\beta\hbox{-}{\tt HpPy}$

-	TABLE 167: 12-ring β-Hairpin Polyamides f	for recognition of 8-bp 5'-WGATSNNW-3'
	DNA sequence	aromatic amino acid sequence
	1809β) 5'-W G A T G T T W-3'	${\tt ImPy-}\beta\hbox{-}{\tt ImHpHp-}\gamma\hbox{-}{\tt PyPyPy-}\beta\hbox{-}{\tt HpPy}$
5	1810β) 5'-W G A T G T A W-3'	${\tt ImPy-}\beta\hbox{-}{\tt ImHpPy-}\gamma\hbox{-}{\tt HpPyPy-}\beta\hbox{-}{\tt HpPy}$
	1811β) 5'-W G A T G T G W-3'	${\tt ImPy-\beta-ImHpIm-\gamma-PyPyPy-\beta-HpPy}$
	1812β) 5'-W G A T G T C W-3'	${\tt ImPy-\beta-ImHpPy-\gamma-ImPyPy-\beta-HpPy}$
	1813β) 5'-W G A T G A T W-3'	${\tt ImPy-}\beta\hbox{-}{\tt ImPyHp-}\gamma\hbox{-}{\tt PyHpPy-}\beta\hbox{-}{\tt HpPy}$
	1814β) 5'-W G A T G A A W-3'	${\tt ImPy-\beta-ImPyPy-\gamma-HpHpPy-\beta-HpPy}$
10	1815β) 5'-W G A T G A G W-3'	${\tt ImPy-}\beta\hbox{-}{\tt ImPyIm-}\gamma\hbox{-}{\tt PyHpPy-}\beta\hbox{-}{\tt HpPy}$
	1816β) 5'-W G A T G A C W-3'	${\tt ImPy-\beta-ImPyPy-\gamma-ImHpPy-\beta-HpPy}$
	1817β) 5'-W G A T G G T W-3'	${\tt ImPy-}\beta\hbox{-}{\tt ImImHp-}\gamma\hbox{-}{\tt PyPyPy-}\beta\hbox{-}{\tt HpPy}$
	1818β) 5'-W G A T G G A W-3'	${\tt ImPy-}\beta\hbox{-}{\tt ImImPy-}\gamma\hbox{-}{\tt HpPyPy-}\beta\hbox{-}{\tt HpPy}$
	1819β) 5'-W G A T G C T W-3'	${\tt ImPy-}\beta\hbox{-}{\tt ImPyHp-}\gamma\hbox{-}{\tt PyImPy-}\beta\hbox{-}{\tt HpPy}$
15	1820β) 5'-W G A T G C A W-3'	${\tt ImPy-\beta-ImPyPy-\gamma-HpImPy-\beta-HpPy}$
	1821β) 5'-W G A T G G G W-3'	${\tt ImPy-\beta-ImImIm-\gamma-PyPyPy-\beta-HpPy}$
	1822β) 5'-W G A T G G C W-3'	${\tt ImPy-\beta-ImImPy-\gamma-ImPyPy-\beta-HpPy}$
	1823β) 5'-W G A T G C G W-3'	${\tt ImPy-\beta-ImPyIm-\gamma-PyImPy-\beta-HpPy}$
	1824β) 5'-W G A T G C C W-3'	${\tt ImPy-\beta-ImPyPy-\gamma-ImImPy-\beta-HpPy}$
20	1825β) 5'-W G A T C T T W-3'	$ImPy-\beta-PyHpHp-\gamma-PyPyIm-\beta-HpPy$
	1826β) 5'-W G A T C T A W-3'	${\tt ImPy-\beta-PyHpPy-\gamma-HpPyIm-\beta-HpPy}$
	1827β) 5'-W G A T C T G W-3'	ІmРу-β-РуНрІm-γ-РуРуІm-β-НрРу
	1828β) 5'-W G A T C T C W-3'	${\tt ImPy-\beta-PyHpPy-\gamma-ImPyIm-\beta-HpPy}$
	1829β) 5'-W G A T C A T W-3'	ImРу-β-РуРуНр-γ-РуНрІm-β-НрРу
25	1830β) 5'-W G A T C A A W-3'	ІmРу-β-РуРуРу-γ-НрНрІm-β-НрРу
	1831β) 5'-W G A T C A G W-3'	`ІmРу-β-РуРуІm-γ-РуНрІm-β-НрРу
	1832β) 5'-W G A T C A C W-3'	${\tt ImPy-\beta-PyPyPy-\gamma-ImHpIm-\beta-HpPy}$
	1833β) 5'-W G A T C G T W-3'	${\tt ImPy-eta-PyImHp-\gamma-PyPyIm-eta-HpPy}$
	1834β) 5'-W G A T C G A W-3'	$ImPy-\beta-PyImPy-\gamma-HpPyIm-\beta-HpPy$
30	1835β) 5'-W G A T C C T W-3'	ІmРу-β-РуРуНр-γ-РуІmІm-β-НрРу
	1836β) 5'-W G A T C C A W-3'	${\tt ImPy-}eta-{\tt PyPyPy-}\gamma-{\tt HpImIm-}eta-{\tt HpPy}$
	1837β) 5'-W G A T C G G W-3'	ImPy-β-PyImIm-γ-PyPyIm-β-HpPy
	1838β) 5'-W G A T C G C W-3'	ImPy-β-PyImPy-γ-ImPyIm-β-HpPy
	1839β) 5'-W G A T C C G W-3'	ImPy-β-PyPyIm-γ-PyImIm-β-HpPy
35	1840β) 5'-W G A T C C C W-3'	${\tt ImPy-eta-PyPyPy-\gamma-ImImIm-eta-HpPy}$

	TABLE 168: 12-ring β-Hairpin Polyamides	for recognition of 8-bp 5'-WGAAWNNW-3'
=	DNA sequence	aromatic amino acid sequence
	1841β) 5′-W G A A T T T W-3'	ІπРу-β-НрНрНр-γ-РуРуРу-β-НрРу
5	1842β) 5′-W G A A T T A W-3'	ImРу-β-НрНрРу-γ-НрРуРу-β-НрРу
	1843β) 5′-W G A A T T G W-3'	${\tt ImPy-}\beta{\tt -HpHpIm-}\gamma{\tt -PyPyPy-}\beta{\tt -HpPy}$
	1844β) 5'-W G A A T T C W-3'	${\tt ImPy-\beta-HpHpPy-\gamma-ImPyPy-\beta-HpPy}$
	1845β) 5′-W G A A T A T W-3'	ІπРу-β-НрРуНр-γ-РуНрРу-β-НрРу
	1846β) 5'-W G A A T A A W-3'	${\tt ImPy-\beta-HpPyPy-\gamma-HpHpPy-\beta-HpPy}$
10	1847β) 5'-W G A A T A G W-3'	${\tt ImPy-}\beta{\tt -HpPyIm-}\gamma{\tt -PyHpPy-}\beta{\tt -HpPy}$
	1848β) 5'-W G A A T A C W-3'	${\tt ImPy-\beta-HpPyPy-\gamma-ImHpPy-\beta-HpPy}$
	1849β) 5′-W G A A T G T W-3'	${\tt ImPy-}\beta{\tt -HpImHp-}\gamma{\tt -PyPyPy-}\beta{\tt -HpPy}$
	1850β) 5′-W G A A T G A W-3'	${\tt ImPy-}\beta{\tt -HpImPy-}\gamma{\tt -HpPyPy-}\beta{\tt -HpPy}$
	1851β) 5'-W G A A T G G W-3'	${\tt ImPy-}\beta{\tt -HpImIm-}\gamma{\tt -PyPyPy-}\beta{\tt -HpPy}$
15	1852β) 5'-W G A A T G C W-3'	${\tt ImPy-}\beta{\tt -HpImPy-}\gamma{\tt -ImPyPy-}\beta{\tt -HpPy}$
	1853β) 5'-W G A A T C T W-3'	${\tt ImPy-}\beta{\tt -HpPyHp-}\gamma{\tt -PyImPy-}\beta{\tt -HpPy}$
	1854β) 5'-W G A A T C A W-3'	${\tt ImPy-}\beta{\tt -HpPyPy-}\gamma{\tt -HpImPy-}\beta{\tt -HpPy}$
	1855β) 5'-W G A A T C G W-3'	${\tt ImPy-\beta-HpPyIm-\gamma-PyImPy-\beta-HpPy}$
	1856β) 5'-W G A A T C C W-3'	${\tt ImPy-\beta-HpPyPy-\gamma-ImImPy-\beta-HpPy}$
20	1857β) 5′-W G A A A T T W-3'	${\tt ImPy-\beta-PyHpHp-\gamma-PyPyHp-\beta-HpPy}$
	1858β) 5′-W G A A A T A W-3'	${\tt ImPy-}\beta ext{-}{\tt PyHpPy-}\gamma ext{-}{\tt HpPyHp-}\beta ext{-}{\tt HpPy}$
	1869β) 5'-W G A A A T G W-3'	${\tt ImPy-\beta-PyHpIm-\gamma-PyPyHp-\beta-HpPy}$
	1860β) 5'-W G A A A T C W-3'	${\tt ImPy-\beta-PyHpPy-\gamma-ImPyHp-\beta-HpPy}$
	1861β) 5′-W G A A A A T W-3'	${\tt ImPy-\beta-PyPyHp-\gamma-PyHpHp-\beta-HpPy}$
25	1862β) 5′-W G A A A A A W-3'	${\tt ImPy-\beta-PyPyPy-\gamma-HpHpHp-\beta-HpPy}$
	1863β) 5'-W G A A A A G W-3'	$^{ ilde{}}$ ImPy- β -PyPyIm- γ -PyHpHp- β -HpPy
	1864β) 5'-W G A A A A C W-3'	${\tt ImPy-\beta-PyPyPy-\gamma-ImHpHp-\beta-HpPy}$
	1865β) 5′-W G A A G T W-3'	${\tt ImPy-\beta-PyImHp-\gamma-PyPyHp-\beta-HpPy}$
	1866β) 5'-W G A A A G A W-3'	${\tt ImPy-\beta-PyImPy-\gamma-HpPyHp-\beta-HpPy}$
30	1867β) 5'-W G A A A G G W-3'	${\tt ImPy-\beta-PyImIm-\gamma-PyPyHp-\beta-HpPy}$
	1868β) 5'-W G A A A G C W-3'	${\tt ImPy-\beta-PyImPy-\gamma-ImPyHp-\beta-HpPy}$
	1869β) 5'-W G A A A C T W-3'	${\tt ImPy-\beta-PyPyHp-\gamma-PyImHp-\beta-HpPy}$
	1870β) 5'-W G A A A C A W-3'	${\tt ImPy-\beta-PyPyPy-\gamma-HpImHp-\beta-HpPy}$
	1871β) 5'-W G A A A C G W-3'	${\tt ImPy-\beta-PyPyIm-\gamma-PyImHp-\beta-HpPy}$
35	1872β) 5'-W G A A A C C W-3'	${\tt ImPy-\beta-PyPyPy-\gamma-ImImHp-\beta-HpPy}$

	TABI	LE 169: 12-ring β-Hairpin Polyamides for	recognition of 8-bp 5'-WGAASNNW-3'
	I	DNA sequence	aromatic amino acid sequence
	1873β)	5'-W G A A G T T W-3'	${\tt ImPy-\beta-ImHpHp-\gamma-PyPyPy-\beta-HpPy}$
5	1874β) -	5'-W G A A G T A W-3'	${\tt ImPy-}\beta\hbox{-}{\tt ImHpPy-}\gamma\hbox{-}{\tt HpPyPy-}\beta\hbox{-}{\tt HpPy}$
	1875β)	5'-W G A A G T G W-3'	${\tt ImPy-\beta-ImHpIm-\gamma-PyPyPy-\beta-HpPy}$
	1876β)	5'-W G A A G T C W-3'	${\tt ImPy-\beta-ImHpPy-\gamma-ImPyPy-\beta-HpPy}$
	1877β)	5'-W G A A G A T W-3'	${\tt ImPy-\beta-ImPyHp-\gamma-PyHpPy-\beta-HpPy}$
	1878β)	5'-W G A A G A A W-3'	${\tt ImPy-\beta-ImPyPy-\gamma-HpHpPy-\beta-HpPy}$
10	1879β)	5'-W G A A G A G W-3'	${\tt ImPy-\beta-ImPyIm-\gamma-PyHpPy-\beta-HpPy}$
	1880β)	5'-W G A A G A C W-3'	${\tt ImPy-\beta-ImPyPy-\gamma-ImHpPy-\beta-HpPy}$
	1881β)	5'-W G A A G G T W-3'	${\tt ImPy-\beta-ImImHp-\gamma-PyPyPy-\beta-HpPy}$
	1882β)	5'-W G A A G G A W-3'	${\tt ImPy-\beta-ImImPy-\gamma-HpPyPy-\beta-HpPy}$
	1883β)	5'-W G A A G C T W-3'	${\tt ImPy-\beta-ImPyHp-\gamma-PyImPy-\beta-HpPy}$
15	1884β)	5'-W G A A G C A W-3'	${\tt ImPy-\beta-ImPyPy-\gamma-HpImPy-\beta-HpPy}$
	1885β)	5'-W G A A G G G W-3'	${\tt ImPy-\beta-ImImIm-\gamma-PyPyPy-\beta-HpPy}$
	1886β)	5'-W G A A G G C W-3'	${\tt ImPy-\beta-ImImPy-\gamma-ImPyPy-\beta-HpPy}$
	1887β)	5'-W G A A G C G W-3'	${\tt ImPy-\beta-ImPyIm-\gamma-PyImPy-\beta-HpPy}$
	1888β)	5'-W G A A G C C W-3'	${\tt ImPy-\beta-ImPyPy-\gamma-ImImPy-\beta-HpPy}$
20	1889β)	5'-W G A A C T T W-3'	${\tt ImPy-\beta-PyHpHp-\gamma-PyPyIm-\beta-HpPy}$
	1890β)	5'-W G A A C T A W-3'	${\tt ImPy-}\beta\hbox{-}{\tt PyHpPy-}\gamma\hbox{-}{\tt HpPyIm-}\beta\hbox{-}{\tt HpPy}$
	1891β)	5'-W G A A C T G W-3'	$ImPy-\beta-PyHpIm-\gamma-PyPyIm-\beta-HpPy$
	1892β)	5'-W G A A C T C W-3'	${\tt ImPy-\beta-PyHpPy-\gamma-ImPyIm-\beta-HpPy}$
	1893β)	5'-W G A A C A T W-3'	${\tt ImPy-\beta-PyPyHp-\gamma-PyHpIm-\beta-HpPy}$
25	1894β)	5'-W G A A C A A W-3'	${\tt ImPy-\beta-PyPyPy-\gamma-HpHpIm-\beta-HpPy}$
	1895β)	5'-W G A A C A G W-3'	$ImPy - \beta - PyPyIm - \gamma - PyHpIm - \beta - HpPy$
	1896β)	5'-W G A A C A C W-3'	${\tt ImPy-\beta-PyPyPy-\gamma-ImHpIm-\beta-HpPy}$
	1897β)	5'-W G A A C G T W-3'	${\tt ImPy-\beta-PyImHp-\gamma-PyPyIm-\beta-HpPy}$
	1898β)	5'-W G A A C G A W-3'	${\tt ImPy-\beta-PyImPy-\gamma-HpPyIm-\beta-HpPy}$
30	1899β)	5'-W G A A C C T W-3'	${\tt ImPy-\beta-PyPyHp-\gamma-PyImIm-\beta-HpPy}$
	1900β)	5'-W G A A C C A W-3'	${\tt ImPy-\beta-PyPyPy-\gamma-HpImIm-\beta-HpPy}$
	1901β)	5'-W G A A C G G W-3'	$\verb"ImPy-$\beta-$\texttt{PyImIm-}\gamma-$\texttt{PyPyIm-}\beta-\texttt{HpPy}
	1902β)	5'-W G A A C G C W-3'	${\tt ImPy-\beta-PyImPy-\gamma-ImPyIm-\beta-HpPy}$
	1903β)	5'-W G A A C C G W-3'	${\tt ImPy-\beta-PyPyIm-\gamma-PyImIm-\beta-HpPy}$
35	1904β)	5'-W G A A C C C W-3'	${\tt ImPy-\beta-PyPyPy-\gamma-ImImIm-\beta-HpPy}$

	TABLE 170: 12-ring β-Hairpin Polyamides for	or recognition of 8-bp 5'-WGACWNNW-3'
	DNA sequence	aromatic amino acid sequence
	1905β) 5'-W G A C T T T W-3'	ІπРуРу-β-НрНр-γ-РуРу-β-ІπНрРу
5	1906β) 5'-W G A C T T A W-3'	${\tt ImPyPy-}\beta{\tt -HpPy-}\gamma{\tt -HpPy-}\beta{\tt -ImHpPy}$
	1907β) 5'-W G A C T T G W-3'	ІтРуРу-β-НрІт-ү-РуРу-β-ІтНрРу
	1908β) 5'-W G A C T T C W-3'	ΊπΡуΡу-β-НрРу-γ-ІπΡу-β-ІπΗрРу
	1909β) 5'-W G A C T A T W-3'	ІтРуРу-β-РуНр-ү-РуНр-β-ІтНрРу
	1910β) 5'-W G A C T A A W-3'	${\tt ImPyPy-}\beta\hbox{-}{\tt PyPy-}\gamma\hbox{-}{\tt HpHp-}\beta\hbox{-}{\tt ImHpPy}$
10	1911β) 5'-W G A C T A G W-3'	${\tt ImPyPy-\beta-PyIm-\gamma-PyHp-\beta-ImHpPy}$
	1912β) 5'-W G A C T A C W-3'	${\tt ImPyPy-\beta-PyPy-\gamma-ImHp-\beta-ImHpPy}$
	1913β) 5'-W G A C T G T W-3'	${\tt ImPyPy-\beta-ImHp-\gamma-PyPy-\beta-ImHpPy}$
	1914β) 5'-W G A C T G A W-3'	${\tt ImPyPy-}\beta\hbox{-}{\tt ImPy-}\gamma\hbox{-}{\tt HpPy-}\beta\hbox{-}{\tt ImHpPy}$
	1915β) 5'-W G A C T G G W-3'	${\tt ImPyPy-\beta-ImIm-\gamma-PyPy-\beta-ImHpPy}$
15	1916β) 5'-W G A C T G C W-3'	${\tt ImPyPy-\beta-ImPy-\gamma-ImPy-\beta-ImHpPy}$
	1917β) 5'-W G A C T C T W-3'	${\tt ImPyPy-\beta-PyHp-\gamma-PyIm-\beta-ImHpPy}$
	1918β) 5'-W G A C T C A W-3'	${\tt ImPyPy-\beta-PyPy-\gamma-HpIm-\beta-ImHpPy}$
	1919β) 5'-W G A C T C G W-3'	${\tt ImPyPy-\beta-PyIm-\gamma-PyIm-\beta-ImHpPy}$
	1920β) 5'-W G A C T C C W-3'	${\tt ImPyPy-\beta-PyPy-\gamma-ImIm-\beta-ImHpPy}$
20	1921β) 5'-W G A C A T T W-3'	${\tt ImPyPy-\beta-HpHp-\gamma-PyPy-\beta-ImHpPy}$
	1922β) 5'-W G A C A T A W-3'	${\tt ImPyPy-}\beta{\tt -HpPy-}\gamma{\tt -HpPy-}\beta{\tt -ImHpPy}$
	1923β) 5'-W G A C A T G W-3'	${\tt ImPyPy-\beta-HpIm-\gamma-PyPy-\beta-ImHpPy}$
	1924β) 5'-W G A C A T C W-3'	${\tt ImPyPy-\beta-HpPy-\gamma-ImPy-\beta-ImHpPy}$
	1925β) 5'-W G A C A A T W-3'	${\tt ImPyPy-\beta-PyHp-\gamma-PyHp-\beta-ImHpPy}$
25	1926β) 5'-W G A C A A A W-3'	$ImPyPy-\beta-PyPy-\gamma-HpHp-\beta-ImHpPy$
	1927β) 5'-W G A C A A G W-3'	$^{\cdot}$ ImPyPy- β -PyIm- γ -PyHp- β -ImHpPy
	1928β) 5'-W G A C A A C W-3'	$ImPyPy-\beta-PyPy-\gamma-ImHp-\beta-ImHpPy$
	1929β) 5'-W G A C A G T W-3'	${\tt ImPyPy-}\beta\hbox{-}{\tt ImHp-}\gamma\hbox{-}{\tt PyPy-}\beta\hbox{-}{\tt ImHpPy}$
	1930β) 5'-W G A C A G A W-3'	${\tt ImPyPy-}\beta\hbox{-}{\tt ImPy-}\gamma\hbox{-}{\tt HpPy-}\beta\hbox{-}{\tt ImHpPy}$
30	1931β) 5'-W G A C A G G W-3'	${\tt ImPyPy-\beta-ImIm-\gamma-PyPy-\beta-ImHpPy}$
	1932β) 5'-W G A C A G C W-3'	${\tt ImPyPy-\beta-ImPy-\gamma-ImPy-\beta-ImHpPy}$
	1933β) 5'-W G A C A C T W-3'	$ImPyPy-\beta-PyHp-\gamma-PyIm-\beta-ImHpPy$
	1934β) 5'-W G A C A C A W-3'	${\tt ImPyPy-}eta-{\tt PyPy-}\gamma-{\tt HpIm-}eta-{\tt ImHpPy}$
	1935β) 5'-W G A C A C G W-3'	ImPyPy-β-PyIm-γ-PyIm-β-ImHpPy
35	1936β) 5'-W G A C A C C W-3'	ImPyPy-β-PyPy-γ-ImIm-β-ImHpPy

	TABLE 171: 12-ring β-Hairpin Polyamides for	or recognition of 8-bp 5'-WGACSNNW-3'
	DNA sequence	aromatic amino acid sequence
	1937β) 5'-W G A C G T T W-3'	${\tt ImPy-\beta-ImHpHp-\gamma-PyPy-\beta-ImHpPy}$
5	1938β) 5'-W G A C G T A W-3'	${\tt ImPy-\beta-ImHpPy-\gamma-HpPy-\beta-ImHpPy}$
	1939β) 5'-W G A C G T G W-3'	${\tt ImPy-\beta-ImHpIm-\gamma-PyPy-\beta-ImHpPy}$
	1940β) 5'-W G A C G T C W-3'	${\tt ImPy-\beta-ImHpPy-\gamma-ImPy-\beta-ImHpPy}$
	1941β) 5'-W G A C G A T W-3'	${\tt ImPy-\beta-ImPyHp-\gamma-PyHp-\beta-ImHpPy}$
	1942β) 5'-W G A C G A A W-3'	${\tt ImPy-\beta-ImPyPy-\gamma-HpHp-\beta-ImHpPy}$
10	1943β) 5'-W G A C G A G W-3'	${\tt ImPy-\beta-ImPyIm-\gamma-PyHp-\beta-ImHpPy}$
	1944β) 5'-W G A C G A C W-3'	${\tt ImPy-\beta-ImPyPy-\gamma-ImHp-\beta-ImHpPy}$
	1945β) 5'-W G A C G G T W-3'	${\tt ImPy-\beta-ImImHp-\gamma-PyPy-\beta-ImHpPy}$
	1946β) 5'-W G A C G G A W-3'	${\tt ImPy-\beta-ImImPy-\gamma-HpPy-\beta-ImHpPy}$
	1947β) 5'-W G A C G C T W-3'	${\tt ImPy-\beta-ImPyHp-\gamma-PyIm-\beta-ImHpPy}$
15	1948β) 5'-W G A C G C A W-3'	${\tt ImPy-\beta-ImPyPy-\gamma-HpIm-\beta-ImHpPy}$
	1949β) 5'-W G A C C T T W-3'	${\tt ImPy-\beta-PyHpHp-\gamma-Py-\beta-ImImHpPy}$
	1950β) 5'-W G A C C T A W-3'	${\tt ImPy-\beta-PyHpPy-\gamma-Hp-\beta-ImImHpPy}$
	1951β) 5'-W G A C C T G W-3'	${\tt ImPy-\beta-PyHpIm-\gamma-Py-\beta-ImImHpPy}$
	1952β) 5'-W G A C C T C W-3'	${\tt ImPy-\beta-PyHpPy-\gamma-Im-\beta-ImImHpPy}$
20	1953β) 5'-W G A C C A T W-3'	${\tt ImPy-\beta-PyPyHp-\gamma-Py-\beta-ImImHpPy}$
	1954β) 5'-W G A C C A A W-3'	${\tt ImPy-\beta-PyPyPy-\gamma-Hp-\beta-ImImHpPy}$
	1955β) 5'-W G A C C A G W-3'	${\tt ImPy-\beta-PyPyIm-\gamma-Py-\beta-ImImHpPy}$
	1956β) 5'-W G A C C A C W-3'	$ImPy-\beta-PyPyPy-\gamma-Im-\beta-ImImHpPy$
	1957β) 5'-W G A C C G T W-3'	ImPy-β-PyImHp-γ-Py-β-ImImHpPy
25	1958β) 5'-W G A C C G A W-3'	${\tt ImPy-\beta-PyImPy-\gamma-Hp-\beta-ImImHpPy}$
	1959β) 5'-W G A C C C T W-3'	$\texttt{ImPy-}\beta ext{-PyPyHp-}\gamma ext{-PyImImIm-}\beta ext{-Py}$
	1960β) 5'-W G A C C C A W-3'	${\tt ImPy-\beta-PyPyPy-\gamma-HpImImIm-\beta-Py}$
	1961β) 5'-W G A C G G G W-3'	ImPy-β-ImImIm-γ-PyPy-β-ImHpPy
	1962β) 5'-W G A C G G C W-3'	${\tt ImPy-\beta-ImImPy-\gamma-ImPy-\beta-ImHpPy}$
30	1963β) 5'-W G A C G C G W-3'	${\tt ImPy-\beta-ImPyIm-\gamma-PyIm-\beta-ImHpPy}$
	1964β) 5'-W G A C G C C W-3'	${\tt ImPy-\beta-ImPyPy-\gamma-ImIm-\beta-ImHpPy}$
	1965β) 5'-W G A C C G G W-3'	${\tt ImPy-\beta-PyImIm-\gamma-Py-\beta-ImImHpPy}$
	1966β) 5'-W G A C C G C W-3'	${\tt ImPy-\beta-PyImPy-\gamma-Im-\beta-ImImHpPy}$
	1967β) 5'-W G A C C C G W-3'	ImPy-β-PyPyIm-γ-PyImImIm-β-Py
35	1968β) 5'-W G A C C C C W-3'	${\tt ImPy-\beta-PyPyPy-\gamma-ImImImIm-\beta-Py}$

1986β) 5'-W G T G A T A W-3' 1987β) 5'-W G T G A T G W-3' 1988β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A A T W-3' 1990β) 5'-W G T G A A W-3' 1991β) 5'-W G T G A A W-3' 1992β) 5'-W G T G A A W-3' 1992β) 5'-W G T G A A C W-3' 1994β) 5'-W G T G A A C W-3' 1994β) 5'-W G T G A A C W-3' 1995β) 5'-W G T G A G C W-3' 1996β) 5'-W G T G A G C W-3' 1997β) 5'-W G T G A G C W-3' 1998β) 5'-W G T G A G C W-3' 1998β) 5'-W G T G A G C W-3' 1998β) 5'-W G T G A G C W-3' 1999β) 5'-W G T G A G C W-3' 1999β) 5'-W G T G A C C W-3'			or recognition of 8-bp 5'-WGTGWNNW-3'
1970β) 5'-W G T G T T A W-3' 1971β) 5'-W G T G T T A W-3' 1972β) 5'-W G T G T T C W-3' 1973β) 5'-W G T G T T C W-3' 1973β) 5'-W G T G T T C W-3' 1974β) 5'-W G T G T A T W-3' 1975β) 5'-W G T G T A A W-3' 1976β) 5'-W G T G T A A W-3' 1976β) 5'-W G T G T A C W-3' 1977β) 5'-W G T G T A C W-3' 1978β) 5'-W G T G T A C W-3' 1978β) 5'-W G T G T G A W-3' 1978β) 5'-W G T G T G C W-3' 1988β) 5'-W G T G T C C W-3' 1988β) 5'-W G T G T C C W-3' 1988β) 5'-W G T G T C C W-3' 1988β) 5'-W G T G T A C W-3' 1988β) 5'-W G T G A T C W-3' 1988β) 5'-W G T G A T C W-3' 1988β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1999β) 5'-W G T G A T C W-3' 1999β) 5'-W G T G A T C W-3' 1999β) 5'-W G T G A T C W-3' 1999β) 5'-W G T G A T C W-3' 1999β) 5'-W G T G A T C W-3' 1999β) 5'-W G T G A T C W-3' 1999β) 5'-W G T G A T C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A G C W-3' 1999β) 5'-W G T G A G C W-3' 1999β) 5'-W G T G A G C W-3' 1999β) 5'-W G T G A G C W-3' 1999β) 5'-W G T G A G C W-3' 1999β) 5'-W G T G A G C W-3' 1999β) 5'-W G T G A G C W-3' 1999β) 5'-W G T G A G C W-3' 1999β) 5'-W G T G A G C W-3' 1999β) 5'-W G T G A G C W-3' 1999β) 5'-W G T G A G C W-3' 1999β) 5'-W G T G A G C W-3' 1999β) 5'-W G T G A G C W-3' 1999β) 5'-W G T G A G C W-3' 1999β) 5'-W G T G A G C W-3' 1999β) 5'-W G T G A G C W-3' 1999β) 5'-W G T G A C T W-3' 1999β) 5'-W G T G A C T W-3' 1999β) 5'-W G T G A C T W-3' 1999β		DNA sequence	aromatic amino acid sequence
1971β) 5'-W G T G T T G W-3' 1972β) 5'-W G T G T T G W-3' 1973β) 5'-W G T G T T C W-3' 1973β) 5'-W G T G T T C W-3' 1974β) 5'-W G T G T A T W-3' 1975β) 5'-W G T G T A A W-3' 1976β) 5'-W G T G T A A W-3' 1976β) 5'-W G T G T A C W-3' 1976β) 5'-W G T G T A C W-3' 1976β) 5'-W G T G T A C W-3' 1977β) 5'-W G T G T G A W-3' 1978β) 5'-W G T G T G A W-3' 1978β) 5'-W G T G T G A W-3' 1979β) 5'-W G T G T G A W-3' 1980β) 5'-W G T G T G C W-3' 1981β) 5'-W G T G T G C W-3' 1982β) 5'-W G T G T C A W-3' 1983β) 5'-W G T G T C C W-3' 1984β) 5'-W G T G T C C W-3' 1986β) 5'-W G T G A T C C W-3' 1986β) 5'-W G T G A T C C W-3' 1987β) 5'-W G T G A T C C W-3' 1988β) 5'-W G T G A T C C W-3' 1988β) 5'-W G T G A T C C W-3' 1988β) 5'-W G T G A T C C W-3' 1988β) 5'-W G T G A T C C W-3' 1988β) 5'-W G T G A T C C W-3' 1988β) 5'-W G T G A T C C W-3' 1988β) 5'-W G T G A T C C W-3' 1990β) 5'-W G T G A T C C W-3' 1990β) 5'-W G T G A T C C W-3' 1990β) 5'-W G T G A T C C W-3' 1990β) 5'-W G T G A T C C W-3' 1990β) 5'-W G T G A T C C W-3' 1990β) 5'-W G T G A T C C W-3' 1990β) 5'-W G T G A T C C W-3' 1990β) 5'-W G T G A T C C W-3' 1990β) 5'-W G T G A T C C W-3' 1990β) 5'-W G T G A T C C W-3' 1990β) 5'-W G T G A T C C W-3' 1990β) 5'-W G T G A T C C W-3' 1990β) 5'-W G T G A T C C W-3' 1990β) 5'-W G T G A T C C W-3' 1990β) 5'-W G T G A T C C W-3' 1990β) 5'-W G T G A A C W-3' 1990β) 5'-W G T G A A C W-3' 1990β) 5'-W G T G A A C W-3' 1990β) 5'-W G T G A A C W-3' 1990β) 5'-W G T G A A C W-3' 1990β) 5'-W G T G A A C W-3' 1990β) 5'-W G T G A G C W-3' 1990β) 5'-W G T G A G C W-3' 1990β) 5'-W G T G A G C W-3' 1990β) 5'-W G T G A G C W-3' 1990β) 5'-W G T G A G C W-3' 1990β) 5'-W G T G A G C W-3' 1990β) 5'-W G T G A G C W-3' 1990β) 5'-W G T G A G C W-3' 1990β) 5'-W G T G A G C W-3' 1990β) 5'-W G T G A G C W-3' 1990β) 5'-W G T G A C C W-3' 1990β) 5'-W G T G A C C W-3' 1990β) 5'-W G T G A C C W-3' 1990β) 5'-W G T G A C C W-3' 1990β) 5'-W G T G A C C W-3' 1990β) 5'-W G T G A C C W-3' 1990β) 5'-W G T		1969β) 5'-W G T G T T T W-3'	${\tt Im-\beta-ImHpHpHp-\gamma-PyPyPyPy-\beta-Py}$
1972β) 5'-W G T G T T C W-3' 1973β) 5'-W G T G T A T W-3' 1974β) 5'-W G T G T A T W-3' 1974β) 5'-W G T G T A A W-3' 1975β) 5'-W G T G T A A W-3' 1975β) 5'-W G T G T A A W-3' 1976β) 5'-W G T G T A C W-3' 1976β) 5'-W G T G T A C W-3' 1977β) 5'-W G T G T A C W-3' 1978β) 5'-W G T G T G T W-3' 1978β) 5'-W G T G T G T W-3' 1978β) 5'-W G T G T G T W-3' 1979β) 5'-W G T G T G T G W-3' 1980β) 5'-W G T G T G C W-3' 1981β) 5'-W G T G T G C W-3' 1982β) 5'-W G T G T G C W-3' 1983β) 5'-W G T G T C C W-3' 1984β) 5'-W G T G T C C W-3' 1984β) 5'-W G T G T C C W-3' 1985β) 5'-W G T G T G T C C W-3' 1986β) 5'-W G T G T G T C W-3' 1987β) 5'-W G T G T G T C W-3' 1988β) 5'-W G T G T C C W-3' 1988β) 5'-W G T G T C C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1999β) 5'-W G T G A T C W-3' 1999β) 5'-W G T G A T C W-3' 1999β) 5'-W G T G A T C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β	5	1970β) 5'-W G T G T T A W-3'	${\tt Im-\beta-ImHpHpPy-\gamma-HpPyPyPy-\beta-Py}$
1973β) 5'-W G T G T A T W-3' 1974β) 5'-W G T G T A A W-3' 1975β) 5'-W G T G T A A W-3' 1975β) 5'-W G T G T A A W-3' 1976β) 5'-W G T G T A C W-3' 1976β) 5'-W G T G T A C W-3' 1977β) 5'-W G T G T G T W-3' 1978β) 5'-W G T G T G T W-3' 1978β) 5'-W G T G T G T W-3' 1979β) 5'-W G T G T G C W-3' 1980β) 5'-W G T G T G C W-3' 1981β) 5'-W G T G T G C W-3' 1982β) 5'-W G T G T C T W-3' 1982β) 5'-W G T G T C T W-3' 1983β) 5'-W G T G T C C W-3' 1984β) 5'-W G T G T C C W-3' 1985β) 5'-W G T G T C C W-3' 1986β) 5'-W G T G T C C W-3' 1987β) 5'-W G T G T C C W-3' 1988β) 5'-W G T G T C C W-3' 1988β) 5'-W G T G A T C W-3' 1988β) 5'-W G T G A T C W-3' 1988β) 5'-W G T G A T C W-3' 1988β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A C W-3' 1999β)		1971β) 5'-W G T G T T G W-3'	${\tt Im-\beta-ImHpHpIm-\gamma-PyPyPyPy-\beta-Py}$
1974β) 5'-W G T G T A A W-3' 1975β) 5'-W G T G T A G W-3' 1976β) 5'-W G T G T A C W-3' 1976β) 5'-W G T G T A C W-3' 1977β) 5'-W G T G T G T A C W-3' 1978β) 5'-W G T G T G T A W-3' 1978β) 5'-W G T G T G T A W-3' 1978β) 5'-W G T G T G T A W-3' 1979β) 5'-W G T G T G T G A W-3' 1980β) 5'-W G T G T G C W-3' 1981β) 5'-W G T G T G C W-3' 1982β) 5'-W G T G T C T W-3' 1983β) 5'-W G T G T C C W-3' 1984β) 5'-W G T G T C C W-3' 1985β) 5'-W G T G T C C W-3' 1986β) 5'-W G T G T C C W-3' 1987β) 5'-W G T G T C C W-3' 1988β) 5'-W G T G T C C W-3' 1988β) 5'-W G T G A T C W-3' 1988β) 5'-W G T G A T C W-3' 1988β) 5'-W G T G A T C W-3' 1988β) 5'-W G T G A T C W-3' 1988β) 5'-W G T G A T C W-3' 1988β) 5'-W G T G A T C W-3' 1988β) 5'-W G T G A T C W-3' 1988β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A C W-3' 1999β)		1972β) 5'-W G T G T T C W-3'	${\tt Im-\beta-ImHpHpPy-\gamma-ImPyPyPy-\beta-Py}$
1975β) 5'-W G T G T A G W-3' 1976β) 5'-W G T G T A C W-3' 1977β) 5'-W G T G T A C W-3' 1977β) 5'-W G T G T G T W-3' 1978β) 5'-W G T G T G T W-3' 1978β) 5'-W G T G T G T W-3' 1979β) 5'-W G T G T G G W-3' 1980β) 5'-W G T G T G G W-3' 1981β) 5'-W G T G T G C W-3' 1982β) 5'-W G T G T C A W-3' 1982β) 5'-W G T G T C C W-3' 1983β) 5'-W G T G T C C W-3' 1984β) 5'-W G T G T C C W-3' 1985β) 5'-W G T G T C C W-3' 1986β) 5'-W G T G T C C W-3' 1987β) 5'-W G T G T C C W-3' 1988β) 5'-W G T G A T A W-3' 1988β) 5'-W G T G A T A W-3' 1989β) 5'-W G T G A T A W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A C W-3' 1999β) 5'-W G T G A C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'		1973β) 5'-W G T G T A T W-3'	${\tt Im-\beta-ImHpPyHp-\gamma-PyHpPyPy-\beta-Py}$
1976β) 5'-W G T G T A C W-3' 1977β) 5'-W G T G T G T W-3' 1978β) 5'-W G T G T G T W-3' 1978β) 5'-W G T G T G T W-3' 1979β) 5'-W G T G T G A W-3' 1979β) 5'-W G T G T G G W-3' 1980β) 5'-W G T G T G C W-3' 1981β) 5'-W G T G T C T W-3' 1982β) 5'-W G T G T C T W-3' 1982β) 5'-W G T G T C C W-3' 1983β) 5'-W G T G T C C W-3' 1984β) 5'-W G T G T C C W-3' 1984β) 5'-W G T G T C C W-3' 1985β) 5'-W G T G T C C W-3' 1986β) 5'-W G T G T C C W-3' 1987β) 5'-W G T G T C C W-3' 1988β) 5'-W G T G A T A W-3' 1988β) 5'-W G T G A T A W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A C C W-3'		1974β) 5'-W G T G T A A W-3'	${\tt Im-}\beta\hbox{-}{\tt ImHpPyPy-}\gamma\hbox{-}{\tt HpHpPyPy-}\beta\hbox{-}{\tt Py}$
1977β) 5'-W G T G T G T W-3' 1978β) 5'-W G T G T G T G A W-3' 1979β) 5'-W G T G T G A W-3' 1979β) 5'-W G T G T G G W-3' 1980β) 5'-W G T G T G C W-3' 1981β) 5'-W G T G T G C W-3' 1982β) 5'-W G T G T C T W-3' 1982β) 5'-W G T G T C A W-3' 1983β) 5'-W G T G T C C W-3' 1984β) 5'-W G T G T C C W-3' 1984β) 5'-W G T G T C C W-3' 1985β) 5'-W G T G A T C C W-3' 1986β) 5'-W G T G A T C W-3' 1987β) 5'-W G T G A T C W-3' 1988β) 5'-W G T G A T C W-3' 1988β) 5'-W G T G A T C W-3' 1988β) 5'-W G T G A T C W-3' 1999β) 5'-W G T G A C C W-3')	1975β) 5'-W G T G T A G W-3'	${\tt Im-\beta-ImHpPyIm-\gamma-PyHpPyPy-\beta-Py}$
1978β) 5'-W G T G T G A W-3' 1979β) 5'-W G T G T G G W-3' 1980β) 5'-W G T G T G C W-3' 1981β) 5'-W G T G T G C W-3' 1982β) 5'-W G T G T G C W-3' 1982β) 5'-W G T G T C T W-3' 1983β) 5'-W G T G T C C W-3' 1984β) 5'-W G T G T C C W-3' 1985β) 5'-W G T G T C C W-3' 1986β) 5'-W G T G T C C W-3' 1987β) 5'-W G T G A T C C W-3' 1988β) 5'-W G T G A T C C W-3' 1988β) 5'-W G T G A T C W-3' 1988β) 5'-W G T G A T C W-3' 1988β) 5'-W G T G A T C W-3' 1988β) 5'-W G T G A T C W-3' 1988β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A C C W-3' 1		1976β) 5'-W G T G T A C W-3'	${\tt Im-\beta-ImHpPyPy-\gamma-ImHpPyPy-\beta-Py}$
1979β) 5'-W G T G T G G W-3'		1977β) 5'-W G Т G Т G Т W-3'	${\tt Im-\beta-ImHpImHp-\gamma-PyPyPyPy-\beta-Py}$
1980β) 5'-W G T G T G C W-3' 1981β) 5'-W G T G T C T W-3' 1982β) 5'-W G T G T C T W-3' 1983β) 5'-W G T G T C A W-3' 1984β) 5'-W G T G T C G W-3' 1985β) 5'-W G T G T C C W-3' 1986β) 5'-W G T G A T T W-3' 1986β) 5'-W G T G A T T W-3' 1987β) 5'-W G T G A T A W-3' 1987β) 5'-W G T G A T G W-3' 1988β) 5'-W G T G A T G W-3' 1989β) 5'-W G T G A T C W-3' 1990β) 5'-W G T G A A A W-3' 1990β) 5'-W G T G A A A W-3' 1990β) 5'-W G T G A A C W-3' 1990β) 5'-W G T G A A C W-3' 1990β) 5'-W G T G A C C W-3'		1978β) 5'-W G T G T G A W-3'	${\tt Im-\beta-ImHpImPy-\gamma-HpPyPyPy-\beta-Py}$
1981β) 5'-W G T G T C T W-3' 1982β) 5'-W G T G T C A W-3' 1983β) 5'-W G T G T C A W-3' 1984β) 5'-W G T G T C G W-3' 1985β) 5'-W G T G T C C W-3' 1985β) 5'-W G T G A T T W-3' 1986β) 5'-W G T G A T A W-3' 1987β) 5'-W G T G A T A W-3' 1988β) 5'-W G T G A T C W-3' 1988β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A A A W-3' 1999β) 5'-W G T G A A A W-3' 1999β) 5'-W G T G A A A W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A A C W-3' 1999β) 5'-W G T G A C C W-3'		1979β) 5'-W G T G T G G W-3'	${\tt Im-\beta-ImHpImIm-\gamma-PyPyPyPy-\beta-Py}$
1982β) 5'-W G T G T C A W-3'	5	1980β) 5'-W G T G T G C W-3'	${\tt Im-\beta-ImHpImPy-\gamma-ImPyPyPy-\beta-Py}$
1983β) 5'-W G T G T C G W-3' 1984β) 5'-W G T G T C C W-3' 1985β) 5'-W G T G T C C W-3' 1985β) 5'-W G T G A T T W-3' 1986β) 5'-W G T G A T A W-3' 1987β) 5'-W G T G A T G W-3' 1987β) 5'-W G T G A T G W-3' 1988β) 5'-W G T G A T G W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A A T W-3' 1990β) 5'-W G T G A A A W-3' 1991β) 5'-W G T G A A A W-3' 1992β) 5'-W G T G A A G W-3' 1993β) 5'-W G T G A A G W-3' 1994β) 5'-W G T G A G C W-3' 1995β) 5'-W G T G A G C W-3' 1997β) 5'-W G T G A G C W-3' 1998β) 5'-W G T G A G C W-3' 1998β) 5'-W G T G A G C W-3' 1997β) 5'-W G T G A G C W-3' 1998β) 5'-W G T G A G C W-3' 1998β) 5'-W G T G A C C W-3' 1998β) 5'-W G T G A C C W-3' 1998β) 5'-W G T G A C C W-3' 1998β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3'		1981β) 5'-W G Т G Т С Т W-3'	${\tt Im-\beta-ImHpPyHp-\gamma-PyImPyPy-\beta-Py}$
1984β) 5'-W G T G T C C W-3' 1985β) 5'-W G T G A T T W-3' 1986β) 5'-W G T G A T A W-3' 1987β) 5'-W G T G A T A W-3' 1987β) 5'-W G T G A T G W-3' 1988β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A A T W-3' 1990β) 5'-W G T G A A T W-3' 1990β) 5'-W G T G A A W-3' 1991β) 5'-W G T G A A C W-3' 1992β) 5'-W G T G A A C W-3' 1993β) 5'-W G T G A A C W-3' 1994β) 5'-W G T G A G C W-3' 1995β) 5'-W G T G A G C W-3' 1996β) 5'-W G T G A G C W-3' 1997β) 5'-W G T G A G C W-3' 1998β) 5'-W G T G A G C W-3' 1998β) 5'-W G T G A G C W-3' 1998β) 5'-W G T G A C A W-3' 1998β) 5'-W G T G A C A W-3' 1998β) 5'-W G T G A C A W-3' 1998β) 5'-W G T G A C A W-3' 1998β) 5'-W G T G A C A W-3' 1998β) 5'-W G T G A C A W-3' 1998β) 5'-W G T G A C A W-3' 1998β) 5'-W G T G A C A W-3' 1998β) 5'-W G T G A C A W-3' 1998β) 5'-W G T G A C A W-3' 1998β) 5'-W G T G A C A W-3' 1999β) 5'-W G T G A C A W-3'		1982β) 5'-W G T G T C A W-3'	${\tt Im-\beta-ImHpPyPy-\gamma-HpImPyPy-\beta-Py}$
1985β) 5'-W G T G A T T W-3' 1986β) 5'-W G T G A T A W-3' 1987β) 5'-W G T G A T A W-3' 1987β) 5'-W G T G A T G W-3' 1988β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A A T W-3' 1990β) 5'-W G T G A A T W-3' 1990β) 5'-W G T G A A W-3' 1991β) 5'-W G T G A A W-3' 1992β) 5'-W G T G A A C W-3' 1993β) 5'-W G T G A A C W-3' 1994β) 5'-W G T G A A C W-3' 1995β) 5'-W G T G A A C W-3' 1996β) 5'-W G T G A G C W-3' 1996β) 5'-W G T G A G C W-3' 1997β) 5'-W G T G A G C W-3' 1998β) 5'-W G T G A G C W-3' 1998β) 5'-W G T G A C C W-3' 1998β) 5'-W G T G A C C W-3' 1998β) 5'-W G T G A C C W-3' 1998β) 5'-W G T G A C C W-3' 1998β) 5'-W G T G A C C W-3' 1998β) 5'-W G T G A C C W-3' 1998β) 5'-W G T G A C C W-3' 1998β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3' 1999β) 5'-W G T G A C C W-3'		1983β) 5'-W G T G T C G W-3'	${\tt Im-\beta-ImHpPyIm-\gamma-PyImPyPy-\beta-Py}$
1986β) 5'-W G T G A T A W-3' 1987β) 5'-W G T G A T G W-3' 1988β) 5'-W G T G A T C W-3' 1989β) 5'-W G T G A A T W-3' 1990β) 5'-W G T G A A W-3' 1991β) 5'-W G T G A A W-3' 1992β) 5'-W G T G A A W-3' 1992β) 5'-W G T G A A C W-3' 1994β) 5'-W G T G A A C W-3' 1994β) 5'-W G T G A G C W-3' 1996β) 5'-W G T G A G C W-3' 1997β) 5'-W G T G A G C W-3' 1998β) 5'-W G T G A G C W-3' 1998β) 5'-W G T G A G C W-3' 1998β) 5'-W G T G A G C W-3' 1998β) 5'-W G T G A G C W-3' 1998β) 5'-W G T G A G C W-3' 1998β) 5'-W G T G A C A W-3' 1998β) 5'-W G T G A C A W-3' 1998β) 5'-W G T G A C A W-3' 1998β) 5'-W G T G A C A W-3' 1998β) 5'-W G T G A C A W-3' 1998β) 5'-W G T G A C A W-3' 1998β) 5'-W G T G A C A W-3' 1999β) 5'-W G T G A C A W-3' 1999β) 5'-W G T G A C A W-3' 1999β) 5'-W G T G A C A W-3' 1999β) 5'-W G T G A C A W-3' 1999β) 5'-W G T G A C A W-3' 1999β) 5'-W G T G A C A W-3' 1999β) 5'-W G T G A C A W-3' 1999β) 5'-W G T G A C A W-3' 1999β) 5'-W G T G A C A W-3' 1999β) 5'-W G T G A C A W-3' 1999β) 5'-W G T G A C A W-3' 1999β) 5'-W G T G A C A W-3' 1999β) 5'-W G T G A C A W-3' 1999β) 5'-W G T G A C A W-3' 1999β) 5'-W G T G A C A W-3' 1999β) 5'-W G T G A C A W-3' 1999β) 5'-W G T G A C A W-3' 1999β) 5'-W G T G A C A W-3'		1984β) 5'-W G T G T C C W-3'	${\tt Im-\beta-ImHpPyPy-\gamma-ImImPyPy-\beta-Py}$
1987β) 5'-W G T G A T G W-3')	1985β) 5'-W G T G A T T W-3'	${\tt Im-\beta-ImPyHpHp-\gamma-PyPyHpPy-\beta-Py}$
1988β) 5'-W G T G A T C W-3'		1986β) 5'-W G T G A T A W-3'	${\tt Im-\beta-ImPyHpPy-\gamma-HpPyHpPy-\beta-Py}$
1989β) 5'-W G T G A A T W-3'		1987β) 5'-W G T G A T G W-3'	${\tt Im-\beta-ImPyHpIm-\gamma-PyPyHpPy-\beta-Py}$
1990β) 5'-W G T G A A A W-3'		1988β) 5'-W G T G A T C W-3'	${\tt Im-\beta-ImPyHpPy-\gamma-ImPyHpPy-\beta-Py}$
1991β) 5'-W G T G A A G W-3' Im-β-ImPyPyIm-γ-PyHpHpPy-β-Py 1992β) 5'-W G T G A A C W-3' Im-β-ImPyPyPy-γ-ImHpHpPy-β-Py 1993β) 5'-W G T G A G T W-3' Im-β-ImPyImHp-γ-PyPyHpPy-β-Py 1994β) 5'-W G T G A G A W-3' Im-β-ImPyImPy-γ-HpPyHpPy-β-Py 1995β) 5'-W G T G A G G W-3' Im-β-ImPyImIm-γ-PyPyHpPy-β-Py 1996β) 5'-W G T G A G C W-3' Im-β-ImPyImPy-γ-ImPyHpPy-β-Py 1997β) 5'-W G T G A C T W-3' Im-β-ImPyPyHp-γ-PyImHpPy-β-Py 1998β) 5'-W G T G A C A W-3' Im-β-ImPyPyPy-γ-PyImHpPy-β-Py 1999β) 5'-W G T G A C G W-3' Im-β-ImPyPyPy-γ-PyImHpPy-β-Py 1999β) 5'-W G T G A C G W-3' Im-β-ImPyPyIm-γ-PyImHpPy-β-Py		1989β) 5'-W G T G A A T W-3'	${\tt Im-\beta-ImPyPyHp-\gamma-PyHpHpPy-\beta-Py}$
1992β) 5'-W G T G A A C W-3' Im-β-ImPyPyPy-γ-ImHpHpPy-β-Py 1993β) 5'-W G T G A G T W-3' Im-β-ImPyImHp-γ-PyPyHpPy-β-Py 1994β) 5'-W G T G A G A W-3' Im-β-ImPyImPy-γ-HpPyHpPy-β-Py 1995β) 5'-W G T G A G G W-3' Im-β-ImPyImPy-γ-PyPyHpPy-β-Py 1996β) 5'-W G T G A G C W-3' Im-β-ImPyImPy-γ-ImPyHpPy-β-Py 1997β) 5'-W G T G A C T W-3' Im-β-ImPyPyHp-γ-PyImHpPy-β-Py 1998β) 5'-W G T G A C A W-3' Im-β-ImPyPyPy-γ-PyImHpPy-β-Py 1999β) 5'-W G T G A C G W-3' Im-β-ImPyPyPy-γ-PyImHpPy-β-Py		1990β) 5'-W G T G A A W-3'	${\tt Im-\beta-ImPyPyPy-\gamma-HpHpHpPy-\beta-Py}$
1993β) 5'-W G T G A G T W-3' Im-β-ImPyImHp-γ-PyPyHpPy-β-Py 1994β) 5'-W G T G A G G W-3' Im-β-ImPyImIm-γ-PyPyHpPy-β-Py 1995β) 5'-W G T G A G C W-3' Im-β-ImPyImIm-γ-PyPyHpPy-β-Py 1997β) 5'-W G T G A C T W-3' Im-β-ImPyPyHp-γ-PyImHpPy-β-Py 1998β) 5'-W G T G A C A W-3' Im-β-ImPyPyHp-γ-PyImHpPy-β-Py 1999β) 5'-W G T G A C G W-3' Im-β-ImPyPyPy-γ-HpImHpPy-β-Py 1999β) 5'-W G T G A C G W-3' Im-β-ImPyPyPy-γ-PyImHpPy-β-Py		1991β) 5'-W G T G A A G W-3'	$\verb"Im-$\beta-\verb"ImPyPyIm-$\gamma-$pyHpHpPy-$\beta-$py"$
1994β) 5'-W G T G A G A W-3' Im-β-ImPyImPy-γ-HpPyHpPy-β-Py 1995β) 5'-W G T G A G G W-3' Im-β-ImPyImIm-γ-PyPyHpPy-β-Py 1996β) 5'-W G T G A G C W-3' Im-β-ImPyImPy-γ-ImPyHpPy-β-Py 1997β) 5'-W G T G A C T W-3' Im-β-ImPyPyHp-γ-PyImHpPy-β-Py 1998β) 5'-W G T G A C A W-3' Im-β-ImPyPyPy-γ-HpImHpPy-β-Py 1999β) 5'-W G T G A C G W-3' Im-β-ImPyPyIm-γ-PyImHpPy-β-Py		1992β) 5'-W G T G A A C W-3'	${\tt Im-\beta-ImPyPyPy-\gamma-ImHpHpPy-\beta-Py}$
1995β) 5'-W G T G A G G W-3' Im-β-ImPyImIm-γ-PyPyHpPy-β-Py 1996β) 5'-W G T G A G C W-3' Im-β-ImPyImPy-γ-ImPyHpPy-β-Py 1997β) 5'-W G T G A C T W-3' Im-β-ImPyPyHp-γ-PyImHpPy-β-Py 1998β) 5'-W G T G A C A W-3' Im-β-ImPyPyPy-γ-HpImHpPy-β-Py 1999β) 5'-W G T G A C G W-3' Im-β-ImPyPyIm-γ-PyImHpPy-β-Py		1993β) 5′-W G T G A G T W-3'	${\tt Im-\beta-ImPyImHp-\gamma-PyPyHpPy-\beta-Py}$
1996β) 5'-W G T G A G C W-3' Im-β-ImPyImPy-γ-ImPyHpPy-β-Py 1997β) 5'-W G T G A C T W-3' Im-β-ImPyPyHp-γ-PyImHpPy-β-Py 1998β) 5'-W G T G A C A W-3' Im-β-ImPyPyPy-γ-HpImHpPy-β-Py 1999β) 5'-W G T G A C G W-3' Im-β-ImPyPyIm-γ-PyImHpPy-β-Py		1994β) 5'-W G T G A G A W-3'	${\tt Im-\beta-ImPyImPy-\gamma-HpPyHpPy-\beta-Py}$
1997β) 5'-W G T G A C T W-3' Im-β-ImPyPyHp-γ-PyImHpPy-β-Py 1998β) 5'-W G T G A C A W-3' Im-β-ImPyPyPy-γ-HpImHpPy-β-Py 1999β) 5'-W G T G A C G W-3' Im-β-ImPyPyIm-γ-PyImHpPy-β-Py)	1995β) 5'-W G T G A G G W-3'	${\tt Im-\beta-ImPyImIm-\gamma-PyPyHpPy-\beta-Py}$
1998β) 5'-W G T G A C A W-3' Im-β-ImPyPyPy-γ-HpImHpPy-β-Py 1999β) 5'-W G T G A C G W-3' Im-β-ImPyPyIm-γ-PyImHpPy-β-Py		1996β) 5'-W G T G A G C W-3'	${\tt Im-\beta-ImPyImPy-\gamma-ImPyHpPy-\beta-Py}$
1999β) 5'-W G T G A C G W-3' Im-β-ImPyPyIm-γ-PyImHpPy-β-Py		1997β) 5'-W G T G A C T W-3.	${\tt Im-\beta-ImPyPyHp-\gamma-PyImHpPy-\beta-Py}$
		1998β) 5'-W G T G A C A W-3'	${\tt Im-\beta-ImPyPyPy-\gamma-HpImHpPy-\beta-Py}$
2000 β) 5'-W G T G A C C W-3' Im- β -ImPyPyPy- γ -ImImHpPy- β -Py		1999β) 5'-W G T G A C G W-3'	${\tt Im-\beta-ImPyPyIm-\gamma-PyImHpPy-\beta-Py}$
	5	2000β) 5'-W G T G A C C W-3'	${\tt Im-\beta-ImPyPyPy-\gamma-ImImHpPy-\beta-Py}$

	TABLE 173: 12-ring β-Hairpin Polyamides fo	r recognition of 8-bp 5'-WGTGSNNW-3'
	DNA sequence	aromatic amino acid sequence
	2001β) 5'-W G T G G T T W-3'	${\tt Im-\beta-ImImHpHp-\gamma-PyPyPyPy-\beta-Py}$
5	2002β) 5'-W G T G G T A W-3'	${\tt Im-\beta-ImImHpPy-\gamma-HpPyPyPy-\beta-Py}$
	2003β) 5'-W G T G G T G W-3'	${\tt Im-\beta-ImImHpIm-\gamma-PyPyPyPy-\beta-Py}$
	2004β) 5'-W G T G G T C W-3'	${\tt Im-\beta-ImImHpPy-\gamma-ImPyPyPy-\beta-Py}$
	2005β) 5'-W G T G G A T W-3'	${\tt Im} extst{-}eta extst{-}{\tt Im}{\tt Im}{\tt PyHp} extst{-}\gamma extst{-}{\tt PyHp}{\tt PyPy} extst{-}eta extst{-}{\tt Py}$
	2006β) 5'-W G T G G A A W-3'	${\tt Im-\beta-ImImPyPy-\gamma-HpHpPyPy-\beta-Py}$
10	2007β) 5'-W G T G G A G W-3'	${\tt Im-\beta-ImImPyIm-\gamma-PyHpPyPy-\beta-Py}$
	2008β) 5'-W G T G G A C W-3'	${\tt Im-\beta-ImImPyPy-\gamma-ImHpPyPy-\beta-Py}$
	2009β) 5'-W G T G G G T W-3'	${\tt Im-\beta-ImImImHp-\gamma-PyPyPyPy-\beta-Py}$
	2010β) 5'-W G T G G G A W-3'	${\tt Im-\beta-ImImImPy-\gamma-HpPyPyPy-\beta-Py}$
	2011β) 5'-W G T G G C T W-3'	${\tt Im-\beta-ImImPyHp-\gamma-PyImPyPy-\beta-Py}$
15	2012 β) 5'-W G T G G C A W-3'	${\tt Im-\beta-ImImPyPy-\gamma-HpImPyPy-\beta-Py}$
	2013β) 5'-W G T G C T T W-3'	${\tt Im-\beta-ImPyHpHp-\gamma-PyPyImPy-\beta-Py}$
	2014 eta) 5'-W G T G C T A W-3'	${\tt Im-}\beta\hbox{-}{\tt ImPyHpPy-}\gamma\hbox{-}{\tt HpPyImPy-}\beta\hbox{-}{\tt Py}$
	2015β) 5'-W G T G C T G W-3'	${\tt Im-\beta-ImPyHpIm-\gamma-PyPyImPy-\beta-Py}$
	2016β) 5'-W G T G C T C W-3'	${\tt Im-\beta-ImPyHpPy-\gamma-ImPyImPy-\beta-Py}$
20	2017β) 5'-W G T G C A T W-3'	$Im-\beta-ImPyPyHp-\gamma-PyHpImPy-\beta-Py$
	2018β) 5'-W G T G C A A W-3'	${\tt Im-\beta-ImPyPyPy-\gamma-HpHpImPy-\beta-Py}$
	2019β) 5'-W G T G C A G W-3'	${\tt Im}\hbox{-}{\beta}\hbox{-}{\tt Im}{\tt Py}{\tt Py}{\tt Im}\hbox{-}{\gamma}\hbox{-}{\tt Py}{\tt Hp}{\tt Im}{\tt Py}\hbox{-}{\beta}\hbox{-}{\tt Py}$
	2020β) 5'-W G T G C A C W-3'	${\tt Im-\beta-ImPyPyPy-\gamma-ImHpImPy-\beta-Py}$
	2021 β) 5'-W G T G C G T W-3'	${\tt Im-\beta-ImPyImHp-\gamma-PyPyImPy-\beta-Py}$
25	2022β) 5'-W G T G C G A W-3'	${\tt Im-\beta-ImPyImPy-\gamma-HpPyImPy-\beta-Py}$
	2023β) 5'-W G T G C C T W-3'	$Im-\beta-ImPyPyHp-\gamma-PyImImPy-\beta-Py$
	2024β) 5'-W G T G C C A W-3'	${\tt Im-\beta-ImPyPyPy-\gamma-HpImImPy-\beta-Py}$
	2025β) 5'-W G T G G G G W-3'	${\tt Im-\beta-ImImImIm-\gamma-PyPyPyPy-\beta-Py}$
	2026β) 5'-W G T G G G C W-3'	${\tt Im-\beta-ImImImPy-\gamma-ImPyPyPy-\beta-Py}$
30	2027β) 5'-W G T G G C G W-3'	${\tt Im-eta-ImImPyIm-\gamma-PyImPyPy-eta-Py}$
	2028β) 5'-W G T G G C C W-3'	Im-β-ImImPyPy-γ-ImImPyPy-β-Py
	2029β) 5′-W G T G C G G W-3′	$\operatorname{Im-eta-mPyImIm-\gamma-PyPyImPy-eta-Py}$
	2030β) 5′-W G T G C G C W-3′	Im-β-ImPyImPy-γ-ImPyImPy-β-Py
	2031β) 5'-W G T G C C G W-3'	${\tt Im}$ - ${\tt B}$ - ${\tt Im}$ - ${\tt Py}$ - ${\tt Py}$ ${\tt Im}$ - ${\tt Py}$ - ${\tt Py}$
35	2032β) 5′-W G T G C C W-3′	${\tt Im-\beta-ImPyPyPy-\gamma-ImImImPy-\beta-Py}$

	TAB	LE 174: 12-ring β-Hairpin Polyamides for	recognition of 8-bp 5'-WGTTWNNW-3'
_		DNA sequence	aromatic amino acid sequence
	2033β)	5'-W G T T T T T W-3'	ІшНр-β-НрНрНр-ү-РуРуРу-β-РуРу
5	2034β)	· 5'-W G T T T T A W-3'	${\tt ImHp}$ - ${\tt \beta}$ - ${\tt HpHpPy}$ - ${\tt \gamma}$ - ${\tt HpPyPy}$ - ${\tt \beta}$ - ${\tt PyPy}$
	2035β)	5'-W G T T T T G W-3'	${\tt ImHp-\beta-HpHpIm-\gamma-PyPyPy-\beta-PyPy}$
	2036β)	5'-W G T T T C W-3'	${\tt ImHp-}\beta\hbox{-}{\tt HpHpPy-}\gamma\hbox{-}{\tt ImPyPy-}\beta\hbox{-}{\tt PyPy}$
	2037β)	5'-W G T T T A T W-3'	Ітнр-β-нрРунр-ү-РунрРу-β-РуРу
	2038β)	5'-W G T T T A A W-3'	Ітнр-β-нрруру-ү-нрнрру-β-руру
10	2039β)	5'-W G T T T A G W-3'	${\tt ImHp-\beta-HpPyIm-\gamma-PyHpPy-\beta-PyPy}$
	2040β)	5'-W G T T T A C W-3'	${\tt ImHp-\beta-HpPyPy-\gamma-ImHpPy-\beta-PyPy}$
	2041β)	5'-W G T T T G T W-3'	${\tt ImHp-\beta-HpImHp-\gamma-PyPyPy-\beta-PyPy}$
	2042β)	5'-W G T T T G A W-3'	${\tt ImHp-\beta-HpImPy-\gamma-HpPyPy-\beta-PyPy}$
	2043β)	5'-W G T T T G G W-3'	${\tt ImHp-\beta-HpImIm-\gamma-PyPyPy-\beta-PyPy}$
15	2044β)	5'-W G T T T G C W-3'	${\tt ImHp-\beta-HpImPy-\gamma-ImPyPy-\beta-PyPy}$
	2045β)	5'-W G T T T C T W-3'	Ітнр-β-нррунр-ү-руітру-β-руру
	2046β)	5'-W'G T T T C A W-3'	${\tt ImHp-\beta-HpPyPy-\gamma-HpImPy-\beta-PyPy}$
	2047β)	5'-W G T T T C G W-3'	${\tt ImHp-\beta-HpPyIm-\gamma-PyImPy-\beta-PyPy}$
	2048β)	5'-W G T T T C C W-3'	${\tt ImHp-\beta-HpPyPy-\gamma-ImImPy-\beta-PyPy}$
20	2049β)	5'-W G T T A T T W-3'	${\tt ImHp-\beta-PyHpHp-\gamma-PyPyHp-\beta-PyPy}$
	2050β)	5'-W G T T A T A W-3'	${\tt Imhp-\beta-PyhpPy-\gamma-hpPyhp-\beta-PyPy}$
	2051β)	5'-W G T T A T G W-3'	${\tt ImHp-\beta-PyHpIm-\gamma-PyPyHp-\beta-PyPy}$
	2052β)	5'-W G T T A T C W-3'	${\tt ImHp-\beta-PyHpPy-\gamma-ImPyHp-\beta-PyPy}$
	2053β)	5'-W G T T A A T W-3'	${\tt ImHp-\beta-PyPyHp-\gamma-PyHpHp-\beta-PyPy}$
25	2054β)	5'-W G T T A A A W-3'	${\tt ImHp-\beta-PyPyPy-\gamma-HpHpHp-\beta-PyPy}$
	2055β)	5'-W G T T A A G W-3'	$\texttt{ImHp-}\beta-\texttt{PyPyIm-}\gamma-\texttt{PyHpHp-}\beta-\texttt{PyPy}$
	2056β)	5'-W G T T A A C W-3'	${\tt ImHp-\beta-PyPyPy-\gamma-ImHpHp-\beta-PyPy}$
	2057β)	5'-W G T T A G T W-3'	${\tt ImHp-\beta-PyImHp-\gamma-PyPyHp-\beta-PyPy}$
	2058β)	5'-W G T T A G A W-3'	${\tt ImHp-\beta-PyImPy-\gamma-HpPyHp-\beta-PyPy}$
30	2059β)	5'-W G T T A G G W-3'	${\tt ImHp-\beta-PyImIm-\gamma-PyPyHp-\beta-PyPy}$
	2060β)	5'-W G T T A G C W-3'	${\tt ImHp-\beta-PyImPy-\gamma-ImPyHp-\beta-PyPy}$
	2061β)	5'-W G T T A C T W-3'	${\tt ImHp-\beta-PyPyHp-\gamma-PyImHp-\beta-PyPy}$
	2062β)	5'-W G T T A C A W-3'	${\tt ImHp-\beta-PyPyPy-\gamma-HpImHp-\beta-PyPy}$
	2063β)	5'-W G T T A C G W-3'	${\tt ImHp-\beta-PyPyIm-\gamma-PyImHp-\beta-PyPy}$
35	2064β)	5'-W G T T A C C W-3'	${\tt ImHp-\beta-PyPyPy-\gamma-ImImHp-\beta-PyPy}$

-	TABLE 175: 12-ring β-Hairpin Polyamides f	for recognition of 8-bp 5'-WGTTSNNW-3'
_	DNA sequence	aromatic amino acid sequence
	2065β) 5'-W G T T G T T W-3'	${\tt ImHp-\beta-ImHpHp-\gamma-PyPyPy-\beta-PyPy}$
5	2066β) 5'-W G T T G T A W-3'	${\tt ImHp-\beta-ImHpPy-\gamma-HpPyPy-\beta-PyPy}$
	2067β) 5'-W G T T G T G W-3'	${\tt ImHp-\beta-ImHpIm-\gamma-PyPyPy-\beta-PyPy}$
	2068β) 5'-W G T T G T C W-3'	${\tt ImHp-\beta-ImHpPy-\gamma-ImPyPy-\beta-PyPy}$
	2069β) 5'-W G T T G A T W-3'	${\tt ImHp-\beta-ImPyHp-\gamma-PyHpPy-\beta-PyPy}$
	2070β) 5'-W G T T G A A W-3'	$ImHp-\beta-ImPyPy-\gamma-HpHpPy-\beta-PyPy$
10	2071β) 5'-W G T T G A G W-3'	${\tt ImHp-\beta-ImPyIm-\gamma-PyHpPy-\beta-PyPy}$
	2072β) 5'-W G T T G A C W-3'	${\tt ImHp-\beta-ImPyPy-\gamma-ImHpPy-\beta-PyPy}$
	2073β) 5'-W G T T G G T W-3'	${\tt ImHp-\beta-ImImHp-\gamma-PyPyPy-\beta-PyPy}$
	2074β) 5'-W G T T G G A W-3'	${\tt ImHp-\beta-ImImPy-\gamma-HpPyPy-\beta-PyPy}$
	2075β) 5'-W G T T G C T W-3'	${\tt ImHp-\beta-ImPyHp-\gamma-PyImPy-\beta-PyPy}$
15	2076β) 5'-W G T T G C A W-3'	${\tt ImHp-\beta-ImPyPy-\gamma-HpImPy-\beta-PyPy}$
	2077β) 5'-W G T T G G G W-3'	${\tt ImHp-\beta-ImImIm-\gamma-PyPyPy-\beta-PyPy}$
	2078β) 5'-W G T T G G C W-3'	${\tt ImHp-\beta-ImImPy-\gamma-ImPyPy-\beta-PyPy}$
	2079β) 5'-W G T T G C G W-3'	${\tt ImHp-\beta-ImPyIm-\gamma-PyImPy-\beta-PyPy}$
	2080β) 5'-W G T T G C C W-3'	${\tt ImHp-\beta-ImPyPy-\gamma-ImImPy-\beta-PyPy}$
20	2081β) 5'-W G T T C T T W-3'	${\tt ImHp-\beta-PyHpHp-\gamma-PyPyIm-\beta-PyPy}$
	2082β) 5'-W G T T C T A W-3'	${\tt ImHp-\beta-PyHpPy-\gamma-HpPyIm-\beta-PyPy}$
	2083β) 5'-W G T T C T G W-3'	${\tt ImHp-\beta-PyHpIm-\gamma-PyPyIm-\beta-PyPy}$
	2084β) 5'-W G T T C T C W-3'	${\tt ImHp-\beta-PyHpPy-\gamma-ImPyIm-\beta-PyPy}$
	2085β) 5'-W G T T C A T W-3'	${\tt ImHp-\beta-PyPyHp-\gamma-PyHpIm-\beta-PyPy}$
25	2086β) 5'-W G T T C A A W-3'	${\tt ImHp-\beta-PyPyPy-\gamma-HpHpIm-\beta-PyPy}$
	2087β) 5'-W G T T C A G W-3'	$^{\cdot}$ ImHp- β -PyPyIm- γ -PyHpIm- β -PyPy
	2088β) 5'-W G T T C A C W-3'	${\tt ImHp-\beta-PyPyPy-\gamma-ImHpIm-\beta-PyPy}$
	2089β) 5'-W G T T C G T W-3'	${\tt ImHp-\beta-PyImHp-\gamma-PyPyIm-\beta-PyPy}$
	2090β) 5'-W G T T C G A W-3'	$ImHp-\beta-PyImPy-\gamma-HpPyIm-\beta-PyPy$
30	2091β) 5'-W G T T C C T W-3'	$ImHp-eta-PyPyHp-\gamma-PyImIm-eta-PyPy$
	2092β) 5'-W G T T C C A W-3'	$ImHp-\beta-PyPyPy-\gamma-HpImIm-\beta-PyPy$
	2093β) 5'-W G T T C G G W-3'	$ImHp-\beta-PyImIm-\gamma-PyPyIm-\beta-PyPy$
	2094β) 5'-W G T T C G C W-3'	$ImHp-\beta-PyImPy-\gamma-ImPyIm-\beta-PyPy$
	2095β) 5'-W G T T C C G W-3'	$ImHp-\beta-PyPyIm-\gamma-PyImIm-\beta-PyPy$
35	2096β) 5′-W G T T C C C W-3′	${\tt ImHp}$ - ${\tt \beta}$ - ${\tt PyPyPy}$ - ${\tt \gamma}$ - ${\tt ImImIm}$ - ${\tt \beta}$ - ${\tt PyPy}$

	TABLE 176: 12-ring β-Hairpin Polyamides for	recognition of 8-bp 5'-WGTAWNNW-3'
	DNA sequence	aromatic amino acid sequence
	2097β) 5'-W G T A T T T W-3'	ІмНр-β-НрНрНр-ү-РуРуРу-β-РуРу
5	2098β) 5'-W G T A T T A W-3'	ІмНр-β-НрНрРу-ү-НрРуРу-β-РуРу
	2099β) 5'-W G T A T T G W-3'	Ітнр-β-нрнріт-ү-Руруру-β-Руру
	2100β) 5'-W G T A T T C W-3'	Ітнр-β-нрнрру-ү-Ітруру-β-руру
	2101β) 5'-W G T A T A T W-3'	ІмНр-β-НрРуНр-ү-РуНрРу-β-РуРу
	2102β) 5'-W G T A T A A W-3'	ІшНр-β-НрРуРу-ү-НрНрРу-β-РуРу
10	2103β) 5'-W G T A T A G W-3'	Ітнр-β-нрРуІт-ү-РунрРу-β-РуРу
	2104β) 5'-W G T A T A C W-3'	${\tt ImHp-\beta-HpPyPy-\gamma-ImHpPy-\beta-PyPy}$
	2105β) 5'-W G T A T G T W-3'	${\tt ImHp-\beta-HpImHp-\gamma-PyPyPy-\beta-PyPy}$
	2106β) 5'-W G T A T G A W-3'	${\tt ImHp-\beta-HpImPy-\gamma-HpPyPy-\beta-PyPy}$
	2107β) 5'-W G T A T G G W-3'	${\tt ImHp-\beta-HpImIm-\gamma-PyPyPy-\beta-PyPy}$
15	2108β) 5'-W G T A T G C W-3'	${\tt ImHp-\beta-HpImPy-\gamma-ImPyPy-\beta-PyPy}$
	2109β) 5'-W G T A T C T W-3'	${\tt ImHp-\beta-HpPyHp-\gamma-PyImPy-\beta-PyPy}$
	2110β) 5'-W G T A T C A W-3'	${\tt ImHp-\beta-HpPyPy-\gamma-HpImPy-\beta-PyPy}$
	2111β) 5'-W G T A T C G W-3'	${\tt ImHp-\beta-HpPyIm-\gamma-PyImPy-\beta-PyPy}$
	2112β) 5'-W G T A T C C W-3'	${\tt ImHp-\beta-HpPyPy-\gamma-ImImPy-\beta-PyPy}$
20	2113β) 5'-W G T A A T T W-3'	${\tt ImHp-\beta-PyHpHp-\gamma-PyPyHp-\beta-PyPy}$
	2114β) 5′-W G T A A T A W-3'	${\tt ImHp-\beta-PyHpPy-\gamma-HpPyHp-\beta-PyPy}$
	2115β) 5'-W G T A A T G W-3'	${\tt ImHp-\beta-PyHpIm-\gamma-PyPyHp-\beta-PyPy}$
	2116β) 5'-W G T A A T C W-3'	${\tt ImHp-\beta-PyHpPy-\gamma-ImPyHp-\beta-PyPy}$
	2117β) 5′-W G T A A A T W-3'	${\tt ImHp-\beta-PyPyHp-\gamma-PyHpHp-\beta-PyPy}$
25	2118β) 5'-W G T A A A A W-3'	${\tt ImHp-\beta-PyPyPy-\gamma-HpHpHp-\beta-PyPy}$
	2119β) 5'-W G T A A A G W-3'	$\verb ImHp-\beta-PyPyIm-\gamma-PyHpHp-\beta-PyPy \\$
	2120β) 5'-W G T A A A C W-3'	${\tt ImHp-\beta-PyPyPy-\gamma-ImHpHp-\beta-PyPy}$
	2121β) 5'-W G T A A G T W-3'	${\tt ImHp-\beta-PyImHp-\gamma-PyPyHp-\beta-PyPy}$
	2122β) 5'-W G T A A G A W-3'	${\tt ImHp-\beta-PyImPy-\gamma-HpPyHp-\beta-PyPy}$
30	2123β) 5'-W G T A A G G W-3'	${\tt ImHp-\beta-PyImIm-\gamma-PyPyHp-\beta-PyPy}$
	2124β) 5'-W G T A A G C W-3'	${\tt ImHp-\beta-PyImPy-\gamma-ImPyHp-\beta-PyPy}$
	2125β) 5'-W G T A A C T W-3'	ІтНрРуРуРуНр-ү-РуІтНр-β-РуРу
	2126β) 5'-W G T A A C A W-3'	$ImHpPyPyPyPy-\gamma-HpImHp-\beta-PyPy$
	2127β) 5'-W G T A A C G W-3'	ІшНрРуРуРуІш-ү-РуІшНр-β-РуРу
35	2128β) 5'-W G T A A C C W-3'	ІмНрРуРуРуРу-ү-ІмІмНр-β-РуРу

	TABLE 177: 12-ring β-Hairpin Polyamides for	
	DNA sequence	aromatic amino acid sequence
	2129β) 5'-W G T A G T T W-3'	${\tt ImHp-\beta-ImHpHp-\gamma-PyPyPy-\beta-PyPy}$
5	2130β) · 5'-W G T A G T A W-3'	${\tt ImHp-\beta-ImHpPy-\gamma-HpPyPy-\beta-PyPy}$
	2131β) 5'-W G T A G T G W-3'	${\tt ImHp-\beta-ImHpIm-\gamma-PyPyPy-\beta-PyPy}$
	2132β) 5'-W G T A G T C W-3'	${\tt ImHp-\beta-ImHpPy-\gamma-ImPyPy-\beta-PyPy}$
	2133β) 5'-W G T A G A T W-3'	ImHp-β-ImРуHp-γ-РуНpРу-β-РуРу
	2134β) 5'-W G T A G A A W-3'	${\tt ImHp-\beta-ImPyPy-\gamma-HpHpPy-\beta-PyPy}$
10	2135β) 5'-W G T A G A G W-3'	${\tt ImHp-\beta-ImPyIm-\gamma-PyHpPy-\beta-PyPy}$
	2136β) 5'-W G T A G A C W-3'	${\tt ImHp-\beta-ImPyPy-\gamma-ImHpPy-\beta-PyPy}$
	2137β) 5'-W G T A G G T W-3'	${\tt ImHp-\beta-ImImHp-\gamma-PyPyPy-\beta-PyPy}$
	2138β) 5'-W G T A G G A W-3'	${\tt ImHp-\beta-ImImPy-\gamma-HpPyPy-\beta-PyPy}$
	2139β) 5'-W G T A G C T W-3'	${\tt ImHp-\beta-ImPyHp-\gamma-PyImPy-\beta-PyPy}$
15	2140β) 5'-W G T A G C A W-3'	${\tt ImHp-\beta-ImPyPy-\gamma-HpImPy-\beta-PyPy}$
	2141β) 5'-W G T A G G G W-3'	${\tt ImHp-\beta-ImImIm-\gamma-PyPyPy-\beta-PyPy}$
	2142 β) 5'-W G T A G G C W-3'	${\tt ImHp-\beta-ImImPy-\gamma-ImPyPy-\beta-PyPy}$
	2143 β) 5'-W G T A G C G W-3'	${\tt ImHp-\beta-ImPyIm-\gamma-PyImPy-\beta-PyPy}$
	2144 β) 5'-W G T A G C C W-3'	${\tt ImHp-\beta-ImPyPy-\gamma-ImImPy-\beta-PyPy}$
20	2145β) 5'-W G T A C T T W-3'	${\tt ImHp-\beta-PyHpHp-\gamma-PyPyIm-\beta-PyPy}$
	2146β) 5'-W G T A C T A W-3'	${\tt ImHp-\beta-PyHpPy-\gamma-HpPyIm-\beta-PyPy}$
	2147β) 5'-W G T A C T G W-3'	${\tt ImHp-\beta-PyHpIm-\gamma-PyPyIm-\beta-PyPy}$
	2148β) 5'-W G T A C T C W-3'	${\tt ImHp-\beta-PyHpPy-\gamma-ImPyIm-\beta-PyPy}$
	2149β) 5'-W G T A C A T W-3'	${\tt ImHp-\beta-PyPyHp-\gamma-PyHpIm-\beta-PyPy}$
25	2150β) 5'-W G T A C A A W-3'	${\tt ImHp-\beta-PyPyPy-\gamma-HpHpIm-\beta-PyPy}$
	2151β) 5'-W G T A C A G W-3'	$ImHp-\beta-PyPyIm-\gamma-PyHpIm-\beta-PyPy$
	2152β) 5'-W G T A C A C W-3'	${\tt ImHp-\beta-PyPyPy-\gamma-ImHpIm-\beta-PyPy}$
	2153β) 5'-W G T A C G T W-3'	${\tt ImHp-\beta-PyImHp-\gamma-PyPyIm-\beta-PyPy}$
	2154β) 5'-W G T A C G A W-3'	$ImHp-\beta-PyImPy-\gamma-HpPyIm-\beta-PyPy$
30	2155β) 5'-W G T A C C T W-3'	${\tt ImHp-\beta-PyPyHp-\gamma-PyImIm-\beta-PyPy}$
	2156β) 5'-W G T A C C A W-3'	$ImHp-\beta-PyPyPy-\gamma-HpImIm-\beta-PyPy$
	2157β) 5'-W G T A C G G W-3'	${\tt ImHp-\beta-PyImIm-\gamma-PyPyIm-\beta-PyPy}$
	2158β) 5'-W G T A C G C W-3'	${\tt ImHp-\beta-PyImPy-\gamma-ImPyIm-\beta-PyPy}$
	2159β) 5'-W G T A C C G W-3'	${\tt ImHp-\beta-PyPyIm-\gamma-PyImIm-\beta-PyPy}$
35	2160β) 5'-W G T A C C C W-3'	${\tt ImHp-\beta-PyPyPy-\gamma-ImImIm-\beta-PyPy}$

	TABLE 178: 12-ring β-Hairpin Polyamides for	r recognition of 8-bp 5'-WGTCWNNW-3'
	DNA sequence	aromatic amino acid sequence
	2161β) 5'-W G T C T T T W-3'	ІшНрРу-β-НрНр-ү-РуРу-β-ІшРуРу
5	2162β) 5'-W G T C T T A W-3'	ІπΗрРу-β-НрРу-γ-НрРу-β-ІπРуРу
	2163β) 5'-W G T C T T G W-3'	ІшНрРу-β-НрІш-ү-РуРу-β-ІшРуРу
	2164β) 5'-W G T C T T C W-3'	$ImHpPy-\beta-HpPy-\gamma-ImPy-\beta-ImPyPy$
	2165β) 5'-W G T C T A T W-3'	${\tt ImHpPy-\beta-PyHp-\gamma-PyHp-\beta-ImPyPy}$
	2166β) 5'-W G T C T A A W-3'	${\tt ImHpPy-\beta-PyPy-\gamma-HpHp-\beta-ImPyPy}$
10	2167β) 5'-W G T C T A G W-3'	${\tt ImHpPy-\beta-PyIm-\gamma-PyHp-\beta-ImPyPy}$
	2168β) 5'-W G T C T A C W-3'	ІтНрРу-β-РуРу-ү-ІтНр-β-ІтРуРу
	2169β) 5'-W G T C T G T W-3'	${\tt ImHpPy-\beta-ImHp-\gamma-PyPy-\beta-ImPyPy}$
	2170β) 5'-W G T C T G A W-3'	${\tt ImHpPy-\beta-ImPy-\gamma-HpPy-\beta-ImPyPy}$
	2171β) 5'-W G T C T G G W-3'	${\tt ImHpPy-\beta-ImIm-\gamma-PyPy-\beta-ImPyPy}$
15	2172β) 5'-W G T C T G C W-3'	${\tt ImHpPy-\beta-ImPy-\gamma-ImPy-\beta-ImPyPy}$
	2173β) 5'-W G T C T C T W-3'	${\tt ImHpPy-\beta-PyHp-\gamma-PyIm-\beta-ImPyPy}$
	2174β) 5'-W G T C T C A W-3'	${\tt ImHpPy-\beta-PyPy-\gamma-HpIm-\beta-ImPyPy}$
	2175β) 5'-W G T C T C G W-3'	${\tt ImHpPy-\beta-PyIm-\gamma-PyIm-\beta-ImPyPy}$
	2176β) 5'-W G T C T C C W-3'	${\tt ImHpPy-\beta-PyPy-\gamma-ImIm-\beta-ImPyPy}$
20	2177β) 5'-W G T C A T T W-3'	${\tt ImHpPy-\beta-HpHp-\gamma-PyPy-\beta-ImPyPy}$
	2178β) 5′-W G T C A T A W-3'	${\tt ImHpPy-\beta-HpPy-\gamma-HpPy-\beta-ImPyPy}$
	2179β) 5′-W G T C A T G W-3'	${\tt ImHpPy-\beta-HpIm-\gamma-PyPy-\beta-ImPyPy}$
	2180β) 5'-W G T C A T C W-3'	${\tt ImHpPy-\beta-HpPy-\gamma-ImPy-\beta-ImPyPy}$
	2181β) 5′-W G T C A A T W-3'	$ImHpPy-\beta-PyHp-\gamma-PyHp-\beta-ImPyPy$
25	2182β) 5′-W G T C A A A W-3'	${\tt ImHpPy-\beta-PyPy-\gamma-HpHp-\beta-ImPyPy}$
	2183β) 5'-W G T C A A G W-3'	ImHpPy-β-PyIm-γ-PyHp-β-ImPyPy
	2184β) 5′-W G T C A A C W-3'	${\tt ImHpPy-\beta-PyPy-\gamma-ImHp-\beta-ImPyPy}$
	2185β) 5′-W G T C A G T W-3'	$ImHpPy-\beta-ImHp-\gamma-PyPy-\beta-ImPyPy$
	2186β) 5'-W G T C A G A W-3'	${\tt ImHpPy-\beta-ImPy-\gamma-HpPy-\beta-ImPyPy}$
30	2187β) 5'-W G T C A G G W-3'	ImHpPy-β-ImIm-γ-PyPy-β-ImPyPy
	2188β) 5'-W G T C A G C W-3'	ImHpPy-β-ImPy-γ-ImPy-β-ImPyPy
	2189β) 5'-W G T C A C T W-3'	ІтнрРу-β-Рунр-ү-Руіт-β-ІтРуРу
	2190 B) 5'-W G T C A C A W-3'	$ImHpPy-\beta-PyPy-\gamma-HpIm-\beta-ImPyPy$
	2191ß) 5'-W G T C A C G W-3'	ImHpPy-β-PyIm-γ-PyIm-β-ImPyPy
35	2192β) 5'-W G T C A C C W-3'	${\tt ImHpPy-\beta-PyPy-\gamma-ImIm-\beta-ImPyPy}$

	TABLE 179: 12-ring β-Hairpin Polyamides for	or recognition of 8-bp 5'-WGTCSNNW-3'
:	DNA sequence	aromatic amino acid sequence
	2193β) 5'-W G T C G T T W-3'	${\tt ImHp-\beta-ImHpHp-\gamma-PyPy-\beta-ImPyPy}$
5	2194β) 5'-W G T C G T A W-3'	${\tt ImHp-\beta-ImHpPy-\gamma-HpPy-\beta-ImPyPy}$
	2195β) 5'-W G T C G T G W-3'	${\tt ImHp-\beta-ImHpIm-\gamma-PyPy-\beta-ImPyPy}$
	2196β) 5'-W G T C G T C W-3'	${\tt ImHp-\beta-ImHpPy-\gamma-ImPy-\beta-ImP\dot{\gamma}Py}$
	2197β) 5'-W G T C G A T W-3'	${\tt ImHp-\beta-ImPyHp-\gamma-PyHp-\beta-ImPyPy}$
	2198β) 5'-W G T C G A A W-3'	${\tt ImHp-\beta-ImPyPy-\gamma-HpHp-\beta-ImPyPy}$
10	2199β) 5'-W G T C G A G W-3'	${\tt ImHp-\beta-ImPyIm-\gamma-PyHp-\beta-ImPyPy}$
	2200β) 5'-W G T C G A C W-3'	${\tt ImHp-\beta-ImPyPy-\gamma-ImHp-\beta-ImPyPy}$
	2201β) 5'-W G T C G G T W-3'	${\tt ImHp-\beta-ImImHp-\gamma-PyPy-\beta-ImPyPy}$
	2202β) 5'-W G T C G G A W-3'	${\tt ImHp-\beta-ImImPy-\gamma-HpPy-\beta-ImPyPy}$
	2203β) 5'-W G T C G C T W-3'	${\tt ImHp-\beta-ImPyHp-\gamma-PyIm-\beta-ImPyPy}$
15	2204β) 5'-W G T C G C A W-3'	${\tt ImHp-\beta-ImPyPy-\gamma-HpIm-\beta-ImPyPy}$
	2205β) 5'-W G T C C T T W-3'	${\tt ImHp-\beta-PyHpHp-\gamma-Py-\beta-ImImPyPy}$
	2206β) 5'-W G T C C T A W-3'	${\tt ImHp-\beta-PyHpPy-\gamma-Hp-\beta-ImImPyPy}$
	2207β) 5′-W G T C C T G W-3′	${\tt ImHp-\beta-PyHpIm-\gamma-Py-\beta-ImImPyPy}$
	2208β) 5′-W G T C C T C W-3′	${\tt ImHp-\beta-PyHpPy-\gamma-Im-\beta-ImImPyPy}$
20	2209β) 5'-W G T C C A T W-3'	${\tt ImHp-\beta-PyPyHp-\gamma-Py-\beta-ImImPyPy}$
	2210β) 5'-W G T C C A A W-3'	${\tt ImHp-\beta-PyPyPy-\gamma-Hp-\beta-ImImPyPy}$
	2211β) 5'-W G T C C A G W-3'	${\tt ImHp-\beta-PyPyIm-\gamma-Py-\beta-ImImPyPy}$
	2212β) 5'-W G T C C A C W-3'	${\tt ImHp-\beta-PyPyPy-\gamma-Im-\beta-ImImPyPy}$
	2213β) 5'-W G T C C G T W-3'	${\tt ImHp-\beta-PyImHp-\gamma-Py-\beta-ImImPyPy}$
25	2214β) 5'-W G T C C G A W-3'	${\tt ImHp-\beta-PyImPy-\gamma-Hp-\beta-ImImPyPy}$
	2215β) 5'-W G T C C C T W-3'	$\verb"ImHp-$\beta-$PyPyHp-$\gamma-$PyImImIm-$\beta-$Py"$
	2216β) 5'-W G T C C C A W-3'	${\tt ImHp-\beta-PyPyPy-\gamma-HpImImIm-\beta-Py}$
	2217β) 5'-W G T C G G G W-3'	${\tt ImHp-\beta-ImImIm-\gamma-PyPy-\beta-ImPyPy}$
	2218 β) 5'-W G T C G G C W-3'	${\tt ImHp-\beta-ImImPy-\gamma-ImPy-\beta-ImPyPy}$
30	2219β) 5'-W G T C G C G W-3'	${\tt ImHp-\beta-ImPyIm-\gamma-PyIm-\beta-ImPyPy}$
	2220β) 5'-W G T C G C C W-3'	${\tt ImHp-\beta-ImPyPy-\gamma-ImIm-\beta-ImPyPy}$
	2221β) 5'-W G T C C G G W-3'	${\tt ImHp-\beta-PyImIm-\gamma-Py-\beta-ImImPyPy}$
	2222β) 5'-W G T C C G C W-3'	${\tt ImHp-\beta-PyImPy-\gamma-Im-\beta-ImImPyPy}$
	2223β) 5'-W G T C C C G W-3'	$ImHp-\beta-PyPyIm-\gamma-PyImImIm-\beta-Py$
35	2224β) 5'-W G T C C C W-3'	${\tt ImHp-\beta-PyPyPy-\gamma-ImImImIm-\beta-Py}$

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What is claimed is:

1. A method for designing a specific polyamide

$$X_1X_2...X_{m-\gamma-X(m+1)...X(2m-1)}X_{2m}$$

- wherein X_1 , X_2 , X_m , $X_{(m+1)}$, $X_{(2m-1)}$, and X_{2m} are carboxamide residues forming carboxamide binding pairs X_1/X_{2m} , $X_2/X_{(2m-1)}$, $X_m/X_{(m+1)}$, and γ is γ -aminobuytic acid or 2,4 diaminobutyric acid and Dp is dimethylaminopropylamide, suitable for use as a DNA-binding ligand that is selective for identified target DNA sequences 5'-WN₁N₂ ... N_mW-3' where m is an integer having a value from 3 to 6, comprising the steps of:
 - a. identifying a target sequence of double stranded DNA having the form 5'-WN1N2.
 ... NmW-3', N1N2... Nm being the sequence to be bound by carboxamide residues, wherein each N is independently chosen from the group A, G, C, and T, each W is independently chosen from the group A and T, and m is an integer having a value from 3 to 6;
 - b. representing the identified sequence as 5'-Wab... xW-3', wherein a is a first nucleotide to be bound by the X_1 carboxamide residue, b is a second nucleotide to be bound by the X_2 carboxamide residue, and x is the corresponding nucleotide to be bound by the X_m carboxamide residue;
 - c. defining a as A, G, C, or T to correspond to the first nucleotide to be bound by a carboxamide residue in the identified sequence;
 - d. selecting Im as the X_1 carboxamide residue and Py as the X_{2m} carboxamide residue if a = G;
 - e. selecting Py as the X_1 carboxamide residue and Im as the X_{2m} carboxamide residue if a = C;
 - f. selecting Hp as the X_1 carboxamide residue and Py as the X_{2m} carboxamide residue if a = T;
 - g. selecting Py as the X_1 carboxamide residue and Hp as the X_{2m} carboxamide residue if a = A; and
 - h. repeating steps c g for b through x until all carboxamide residues are selected.
- The method of claim 1 further comprising the step of synthesizing the polyamide

$$X_1X_2...X_{m-\gamma-X(m+1)}...X_{(2m-1)}X_{2m}$$

3. The method of claim 2 further comprising the step of determining if the binding affinity of the polyamide to the identified sequence is subnanomolar.

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- The method of claim 2 further comprising the step of determining if the sequence 4. specificity of the polyamide is greater or equal to ten.
- The method of claim 2 further comprising the step of replacing at least one pyrrole 5. residue with a β-alanine residue.
- A method for designing a selective polyamide molecule X1X2X3X4-γ-X5X6X7X8, 6. 5 wherein X1, X2, X3, X4, X5, X6, X7, and X8, are carboxamide residues forming binding pairs X_1/X_8 , X_2/X_7 , X_3/X_6 and X_4/X_5 , and γ is γ -aminobuytic acid or 2,4 diaminobutyric acid suitable for binding to a six base pair sequence of the form 5'-WNNNNW-3' in the minor groove of double stranded DNA, comprising the steps of:
 - a. identifying a six base pair sequence of double stranded DNA having the form 5'-WNNNNW-3', wherein W is either A or T, NNNN is the sequence to be bound by carboxamide residues, and each N is independently A, G, C, or T;

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- b. representing the identified sequence as 5'-WabcdW-3', wherein a is a first nucleotide to be bound by a carboxamide residue, b is a second nucleotide to be bound by a carboxamide residue, c is a third nucleotide to be bound by a carboxamide residue, and d is a fourth nucleotide to be bound by a carboxamide residue;
- c. defining a as A, G, C, or T to correspond to the first nucleotide to be bound by a carboxamide residue in the identified six base pair sequence;
- d. selecting Im as the X₁ carboxamide residue and Py as the X₈ carboxamide residue if a = G;
- e. selecting Py as the X₁ carboxamide residue and Im as the X₈ carboxamide residue if
- f. selecting Hp as the X1 carboxamide residue and Py as the X8 carboxamide residue if a = T:
- g. selecting Py as the X1 carboxamide residue and Hp as the X8 carboxamide residue if a = A;
 - h. defining b as A, G, C, or T to correspond to the second nucleotide to be bound by a carboxamide residue in the identified six base pair sequence;
 - i. selecting Im as the X2 carboxamide residue and Py as the X7 carboxamide residue if b = G:
 - j. selecting Py as the X2 carboxamide residue and Im as the X7 carboxamide residue if b = C;

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- **k.** selecting Hp as the X2 carboxamide residue and Py as the X7 carboxamide residue if b = T;
- 1. selecting Py as the X_2 carboxamide residue and Hp as the X_7 carboxamide residue if b = A;
- m. defining c as A, G, C, or T to correspond to the third nucleotide to be bound by a carboxamide residue in the identified six base pair sequence;
- n. selecting Im as the X_3 carboxamide residue and Py as the X_6 carboxamide residue if c = G;
- o. selecting Py as the X_3 carboxamide residue and Im as the X_6 carboxamide residue if c = C;
- p. selecting Hp as the X3 carboxamide residue and Py as the X6 carboxamide residue if c = T;
- q. selecting Py as the X3 carboxamide residue and Hp as the X6 carboxamide residue if c = A;
- r. defining d as A, G, C, or T to correspond to the fourth nucleotide to be bound by a carboxamide residue in the identified six base pair sequence;
- s. selecting Im as the X4 carboxamide residue and Py as the X5 carboxamide residue if d = G;
- t. selecting Py as the X4 carboxamide residue and Im as the X5 carboxamide residue if d = C;
- u. selecting Hp as the X4 carboxamide residue and Py as the X5 carboxamide residue if d = T; and
- v. selecting Py as the X4 carboxamide residue and Hp as the X5 carboxamide residue if d = A.
- The method of claim 6 further comprising the step of synthesizing the polyamide $X_1X_2X_3X_4-\gamma-X_5X_6X_7X_8$.
 - 8. The method of claim 7 further comprising the step of determining if the binding affinity of the polyamide to the identified sequence is subnanomolar.
- 9. The method of claim 7 further comprising the step of determining if the sequence specificity of the polyamide is greater or equal to ten.
 - 10. The method of claim 7 further comprising the step of replacing at least one pyrrole residue with a β-alanine residue at a position chosen from the group consisting of X₂, X₃, X₆, and X₇.

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- 11. The method of claim 7 further comprising the step of replacing at least one 3-hydroxypyrrole residue with a β-alanine residue at a position chosen from the group consisting of X2, X3, X6, and X7.
- 12. A polyamide composition produced by the process comprising the steps of:

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a. identifying a six base pair sequence of double stranded DNA having the form 5'-WNNNNW-3', wherein W is either A or T, NNNN is the sequence to be bound by carboxamide residues, and each N is independently A, G, C, or T;

- b. representing the identified sequence as 5'-WabcdW-3', wherein a is a first nucleotide to be bound by a carboxamide residue, b is a second nucleotide to be bound by a carboxamide residue, c is a third nucleotide to be bound by a carboxamide residue, and d is a fourth nucleotide to be bound by a carboxamide residue;
- c. defining a as A, G, C, or T to correspond to the first nucleotide to be bound by a carboxamide residue in the identified six base pair sequence;
- d. selecting Im as the X_1 carboxamide residue and Py as the X_8 carboxamide residue if a = G;
- e. selecting Py as the X_1 carboxamide residue and Im as the X_8 carboxamide residue if a = C;
- f. selecting Hp as the X_1 carboxamide residue and Py as the X_8 carboxamide residue if a = T;
- g. selecting Py as the X_1 carboxamide residue and Hp as the X_8 carboxamide residue if a = A;
- h. defining b as A, G, C, or T to correspond to the second nucleotide to be bound by a carboxamide residue in the identified six base pair sequence;
- i. selecting Im as the X₂ carboxamide residue and Py as the X₇ carboxamide residue if
 b = G;
- j. selecting Py as the X_2 carboxamide residue and Im as the X_7 carboxamide residue if b = C;
- k. selecting Hp as the X_2 carboxamide residue and Py as the X_7 carboxamide residue if b = T;
- 1. selecting Py as the X_2 carboxamide residue and Hp as the X_7 carboxamide residue if b = A;
- m. defining c as A, G, C, or T to correspond to the third nucleotide to be bound by a carboxamide residue in the identified six base pair sequence;

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- n. selecting Im as the X_3 carboxamide residue and Py as the X_6 carboxamide residue if c = G;
- o. selecting Py as the X3 carboxamide residue and Im as the X6 carboxamide residue if c = C;
- p. selecting Hp as the X3 carboxamide residue and Py as the X6 carboxamide residue if c = T;
- q. selecting Py as the X₃ carboxamide residue and Hp as the X₆ carboxamide residue if c = A;
- r. defining d as A, G, C, or T to correspond to the fourth nucleotide to be bound by a carboxamide residue in the identified six base pair sequence;
- s. selecting Im as the X4 carboxamide residue and Py as the X5 carboxamide residue if d = G;
- t. selecting Py as the X4 carboxamide residue and Im as the X5 carboxamide residue if d = C;
- u. selecting Hp as the X4 carboxamide residue and Py as the X5 carboxamide residue if d = T;
- v. selecting Py as the X4 carboxamide residue and Hp as the X5 carboxamide residue if d = A; and
- w. synthesizing the polyamide $X_1X_2X_3X_4-\gamma-X_5X_6X_7X_8$.
- 20 13. The polyamides described by the formulas listed in Tables 4 19.
 - 14. The polyamides described by the formulas listed in Tables 20 83.
 - 15. The polyamides described by the formulas listed in Tables 84 179.
- 16. A method for designing a selective polyamide molecule X1X2X3X4X5-γ-X6X7X8X9X10, wherein X1, X2, X3, X4, X5, X6, X7, X8, X9, and X10 are carboxamide residues forming binding pairs X1/X10, X2/X9, X3/X8, X4/X7, and X5/X6, and γ is γ-aminobuytic acid or 2,4 diaminobutyric acid suitable for binding to a six base pair sequence of the form 5'-WNNNNW-3' in the minor groove of double stranded DNA, comprising the steps of:
 - a. identifying a seven base pair sequence of double stranded DNA having the form 5'-WNNNNW-3', wherein W is either A or T, NNNNN is the sequence to be bound by carboxamide residues, and each N is independently A, G, C, or T;
 - **b.** representing the identified sequence as 5'-W**abcde**W-3', wherein a is a first nucleotide to be bound by a carboxamide residue, b is a second nucleotide to be

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bound by a carboxamide residue, c is a third nucleotide to be bound by a carboxamide residue, d is a fourth nucleotide to be bound by a carboxamide residue, and e is a fifth nucleotide to be bound by a carboxamide residue;

- c. defining a as A, G, C, or T to correspond to the first nucleotide to be bound by a carboxamide residue in the identified seven base pair sequence;
- d. selecting Im as the X_1 carboxamide residue and Py as the X_{10} carboxamide residue if a = G;
- e. selecting Py as the X_1 carboxamide residue and Im as the X_{10} carboxamide residue if a = C;
- f. selecting Hp as the X_1 carboxamide residue and Py as the X_{10} carboxamide residue if a = T;
- g. selecting Py as the X_1 carboxamide residue and Hp as the X_{10} carboxamide residue if a = A;
- h. defining b as A, G, C, or T to correspond to the second nucleotide to be bound by a carboxamide residue in the identified seven base pair sequence;
- i. selecting Im as the X_2 carboxamide residue and Py as the X_9 carboxamide residue if b = G:
- j. selecting Py as the X_2 carboxamide residue and Im as the X_9 carboxamide residue if b = C;
- k. selecting Hp as the X_2 carboxamide residue and Py as the X_9 carboxamide residue if b = T:
- I. selecting Py as the X_2 carboxamide residue and Hp as the X_9 carboxamide residue if b = A;
- m. defining c as A, G, C, or T to correspond to the third nucleotide to be bound by a carboxamide residue in the identified seven base pair sequence;
- n. selecting Im as the X_3 carboxamide residue and Py as the X_8 carboxamide residue if c = G;
- o. selecting Py as the X3 carboxamide residue and Im as the X8 carboxamide residue if c = C;
- p. selecting Hp as the X3 carboxamide residue and Py as the X8 carboxamide residue if c = T;
- q. selecting Py as the X3 carboxamide residue and Hp as the X8 carboxamide residue if c = A;

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- r. defining d as A, G, C, or T to correspond to the fourth nucleotide to be bound by a carboxamide residue in the seven base pair sequence identified sequence;
- s. selecting Im as the X4 carboxamide residue and Py as the X7 carboxamide residue if d = G;
- t. selecting Py as the X4 carboxamide residue and Im as the X7 carboxamide residue if d = C;
- u. selecting Hp as the X4 carboxamide residue and Py as the X7 carboxamide residue if d = T;
- v. selecting Py as the X4 carboxamide residue and Hp as the X7 carboxamide residue if d = A;
- w. defining e as A, G, C, or T to correspond to the fifth nucleotide to be bound by a carboxamide residue in the seven base pair sequence identified sequence;
- x. selecting Im as the X5 carboxamide residue and Py as the X6 carboxamide residue if e = G;
- y. selecting Py as the X5 carboxamide residue and Im as the X6 carboxamide residue if e = C;
- z. selecting Hp as the X5 carboxamide residue and Py as the X6 carboxamide residue if e = T; and
- aa. selecting Py as the X5 carboxamide residue and Hp as the X6 carboxamide residue if e = A.
- 17. The method of claim 16 further comprising the step of synthesizing the polyamide $X_1X_2X_3X_4X_5-\gamma-X_6X_7X_8X_9X_{10}$,.
- 18. The method of claim 17 further comprising the step of determining if the binding affinity of the polyamide to the identified sequence is subnanomolar.
- 19. The method of claim 17 further comprising the step of determining if the sequence specificity of the polyamide is greater or equal to ten.
- 20. The method of claim 17 further comprising the step of replacing at least one pyrrole residue with a β-alanine residue at a position chosen from the group consisting of X₂, X₃, X₄, X₇, X₈, and X₉.
 - 21. The method of claim 17 further comprising the step of replacing at least one 3-hydroxypyrrole residue with a β-alanine residue at a position chosen from the group consisting of X2, X3, X4, X7, X8, and X9.

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- 22. A polyamide composition produced by the method of claim 17.
- 23. A polyamide composition produced by the method of claim 18.
- 24. A polyamide composition produced by the method of claim 19.
- 25. A polyamide composition produced by the method of claim 20.
- 26. A polyamide composition produced by the method of claim 21.
 - 27. A method for designing a selective polyamide molecule

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 $X_1X_2X_3X_4X_5X_6-\gamma-X_7X_8X_9X_{10}X_{11}X_{12}$,

wherein X_1 , X_2 , X_3 , X_4 , X_5 , X_6 , X_7 , X_8 , X_9 , X_{10} X_{11} , and X_{12} , are carboxamide residues forming binding pairs X_1/X_{12} , X_2/X_{11} , X_3/X_{10} , X_4/X_9 , X_5/X_8 , and X_6/X_7 , and γ is γ -aminobuytic acid or 2,4 diaminobutyric acid

suitable for binding to a eight base pair sequence of the form 5'-WNNNNNW-3' in the minor groove of double stranded DNA, comprising the steps of:

- a. identifying a eight base pair sequence of double stranded DNA having the form 5'-WNNNNNW-3', wherein W is either A or T, NNNNNN is the sequence to be bound by carboxamide residues, and each N is independently A, G, C, or T;
- b. representing the identified sequence as 5'-WabcdefW-3', wherein a is a first nucleotide to be bound by a carboxamide residue, b is a second nucleotide to be bound by a carboxamide residue, c is a third nucleotide to be bound by a carboxamide residue, d is a fourth nucleotide to be bound by a carboxamide residue, e is a fifth nucleotide to be bound by a carboxamide residue and f is a sixth nucleotide to be bound by a carboxamide residue;
- c. defining a as A, G, C, or T to correspond to the first nucleotide to be bound by a carboxamide residue in the identified eight base pair sequence;
- d. selecting Im as the X_1 carboxamide residue and Py as the X_{12} carboxamide residue if a = G;
- e. selecting Py as the X_1 carboxamide residue and Im as the X_{10} carboxamide residue if a = C;
- f. selecting Hp as the X_1 carboxamide residue and Py as the X_{12} carboxamide residue if a = T;
- g. selecting Py as the X_1 carboxamide residue and Hp as the X_{12} carboxamide residue if a = A;
- h. defining b as A, G, C, or T to correspond to the second nucleotide to be bound by a carboxamide residue in the identified eight base pair sequence;

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- i. selecting Im as the X_2 carboxamide residue and Py as the X_{11} carboxamide residue if b = G;
- j. selecting Py as the X_2 carboxamide residue and Im as the X_{11} carboxamide residue if b = C;
- k. selecting Hp as the X_2 carboxamide residue and Py as the X_{11} carboxamide residue if b = T:
- 1. selecting Py as the X2 carboxamide residue and Hp as the X_{11} carboxamide residue if b = A;
- m. defining c as A, G, C, or T to correspond to the third nucleotide to be bound by a carboxamide residue in the identified eight base pair sequence;
- n. selecting Im as the X3 carboxamide residue and Py as the X_{10} carboxamide residue if c = G;
- o. selecting Py as the X3 carboxamide residue and Im as the X10 carboxamide residue if c = C;
- p. selecting Hp as the X₃ carboxamide residue and Py as the X₁₀ carboxamide residue if c = T;
- q. selecting Py as the X3 carboxamide residue and Hp as the X10 carboxamide residue if c = A;
- r. defining d as A, G, C, or T to correspond to the fourth nucleotide to be bound by a carboxamide residue in the eight base pair sequence identified sequence;
- s. selecting Im as the X4 carboxamide residue and Py as the X9 carboxamide residue if d = G;
- t. selecting Py as the X4 carboxamide residue and Im as the X9 carboxamide residue if d = C:
- u. selecting Hp as the X4 carboxamide residue and Py as the X9 carboxamide residue if d = T;
- v. selecting Py as the X4 carboxamide residue and Hp as the X9 carboxamide residue if d = A;
- w. defining e as A, G, C, or T to correspond to the fifth nucleotide to be bound by a carboxamide residue in the eight base pair sequence identified sequence;
- x. selecting Im as the X_5 carboxamide residue and Py as the X_8 carboxamide residue if e = G;

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- y. selecting Py as the X5 carboxamide residue and Im as the X8 carboxamide residue if e = C;
- z. selecting Hp as the X5 carboxamide residue and Py as the X8 carboxamide residue if e = T;
- aa. selecting Py as the X5 carboxamide residue and Hp as the X8 carboxamide residue if e = A;
- **bb.** defining f as A, G, C, or T to correspond to the sixth nucleotide to be bound by a carboxamide residue in the eight base pair sequence identified sequence;
- cc. selecting Im as the X_6 carboxamide residue and Py as the X_7 carboxamide residue if f = G;
- dd. selecting Py as the X6 carboxamide residue and Im as the X7 carboxamide residue if f = C:
- ee. selecting Hp as the X_6 carboxamide residue and Py as the X_7 carboxamide residue if f = T; and
- ff. selecting Py as the X6 carboxamide residue and Hp as the X7 carboxamide residue if f = A.
- 28. The method of claim 17 further comprising the step of synthesizing the polyamide $X_1X_2X_3X_4X_5X_6-\gamma-X_7X_8X_9X_{10}X_{11}X_{12}$.
- 29. The method of claim 28 further comprising the step of determining if the binding affinity of the polyamide to the identified sequence is subnanomolar.
- 30. The method of claim 28 further comprising the step of determining if the sequence specificity of the polyamide is greater or equal to ten.
- 31. The method of claim 28 further comprising the step of replacing at least one pyrrole residue with a β-alanine residue at a position chosen from the group consisting of X₂, X₃, X₄, X₅, X₈, X₉, X₁₀, and X₁₁.
- 32. The method of claim 28 further comprising the step of replacing at least one 3-hydroxypyrrole residue with a β-alanine residue at a position chosen from the group consisting of X2, X3, X4, X5, X8, X9, X10, and X11.
- 33. A polyamide composition produced by the method of claim 28.
- 30 34. A polyamide composition produced by the method of claim 29.
 - 35. A polyamide composition produced by the method of claim 30.
 - 36. A polyamide composition produced by the method of claim 31.
 - 37. A polyamide composition produced by the method of claim 32.

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- 38. A polyamide composition produced by the method of claim 2 wherein one carboxamide binding pair is β/β .
- 39. A polyamide composition produced by the method of claim 7 wherein one carboxamide binding pair is β/β .
- 40. A polyamide composition produced by the method of claim 17 wherein one carboxamide binding pair is β/β.
 - 41. A selective polyamide according to claim 1 whereby the polyamide is of the formula:

$$\begin{array}{c|c}
R^1 & X & R^3 \\
Y & N & R^2 & O
\end{array}$$

or a pharmaceutically acceptable salt wherein:

R¹ is chosen from H, NH₂, SH, Cl, Br, F, N-acetyl, or N-formyl;

 R^2 is chosen from H, $(CH_2)_mCH_3$, $(CH_2)_mNH_2$, $(CH_2)_mSH$, $(CH_2)_mOH$, $(CH_2)_mNR^5_2$, $(CH_2)_mOR^5$, $(CH_2)_mSR^5$, where $R^5 = (CH_2)_mCH_3$, $(CH_2)_mNH_2$, $(CH_2)_mSH$, $(CH_2)_mOH$ and m is an integer from 0 to 6;

R³ is chosen from H, NH₂, OH, SH, Br, Cl, F, OMe, CH₂OH, CH₂SH, CH₂NH₂;

R⁴ is chosen from -NH(CH₂)₀₋₁₀₀NR⁶R⁷ or NH(CH₂)_pCO NH(CH₂)₀₋₁₀₀NR⁶R⁷ or NHR⁶ or NH(CH₂)_pCONHR⁶, where R⁶ and R⁷ are independently chosen from H, Cl, NO, N-acetyl, benzyl, C₁₋₁₀₀ alkyl, C₁₋₁₀₀ alkylamine, C₁₋₁₀₀ alkyldiamine, C₁₋₁₀₀ alkylcarboxylate, C₁₋₁₀₀ alkenyl, a C₁₋₁₀₀ alkynyl, or a C₁₋₁₀₀L, where L groups can be independently chosen from but is not limited to arylboronic acids, biotins, polyhistidines comprised from about 2 to 8 amino acids, haptens to which an antibody binds, solid phase supports, oligodeoxynucleotide, N-ethylnitrosourea, fluorescein, bromoacetamide, iodoacetamide, DL-α-lipoic acid, acridine, captothesin, pyrene, mitomycin, texas red, anthracene, anthrinilic acid, avidin, DAPI, an oligodeoxynucleotide, isosulfan blue, malachite green, psoralen, ethyl red, 4-(psoraen-8-yloxy)-butyrate, tartaric acid, (+)-α-tocopheral;

where X and Y are chosen from the group consisting of N, CH, COH, CCH₃, CNH₂, CCl, CF;

a is an integer having values of 0 or 1; b is an integer ranging from 1 to 5 inclusive; and c is an integer value ranging from 2 to 10 inclusive.

- 42. The polyamide of claim 1 wherein the duplex DNA sequence is a regulatory sequence.
- 43. The polyamide of claim 1 wherein the duplex DNA sequence is a promoter sequence.
- 44. The polyamide of claim 1 wherein the duplex DNA sequence is a coding sequence.
- 10 45. The polyamide of claim 1 wherein the duplex DNA sequence is a non-coding sequence.
 - 46. The polyamide of claim 1 wherein the binding of the carboxamide binding pairs to the identified target DNA sequence modulates the expression of a gene.
 - 47. A composition conprising an effective amount of the polyamide of claim 1 and a pharmologically suitable excipient.
- 15 48. A diagnostic kit comprising the polyamide of claim 1.

1 ImImPyPy-γ-ImPyPyPy-β-Öp

2 ImImPyPy-γ-ImHpPyPy-β-Dp

3 ImImHpPy-γ-ImPyPyPy-β-Dp

FIG. I

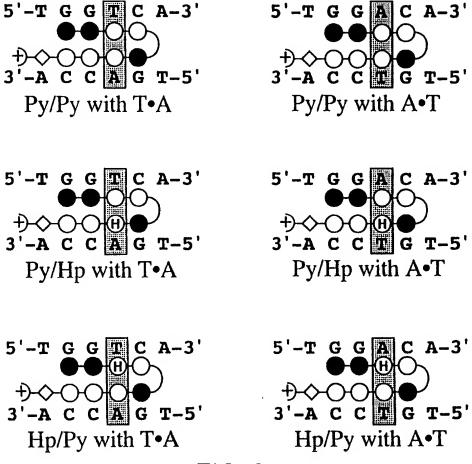


FIG. 2

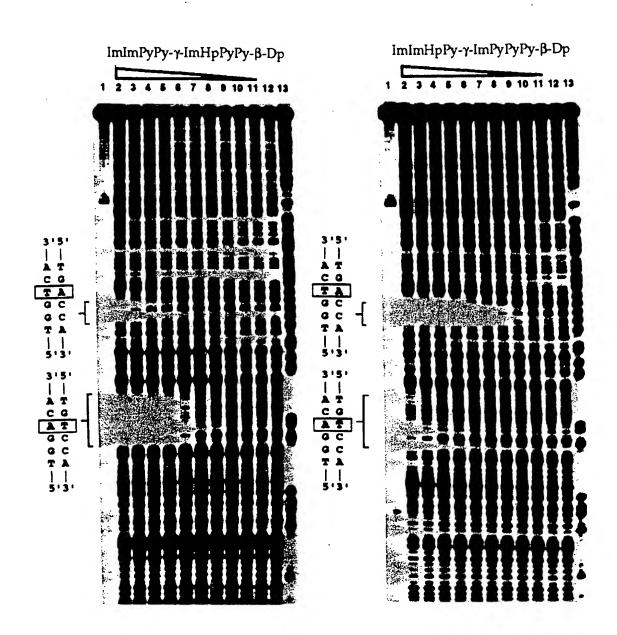
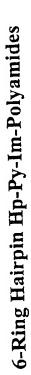
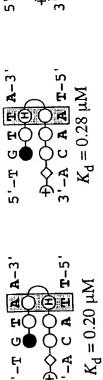


FIG. 3

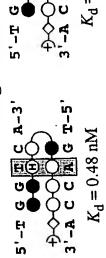


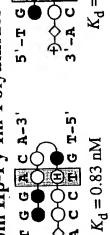


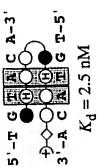
5'-T

5'-T G M T T-3'	+ + + + + + + + + + + + + + + + + + +
5'-T G T T T-3'	р С д а а -5' 3'-а с д а а -5' K _d = 0.008 μМ
н Н А-3'	A M T-5'

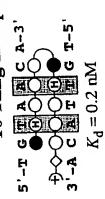












 $K_{\rm d} = 5 \, \rm nM$

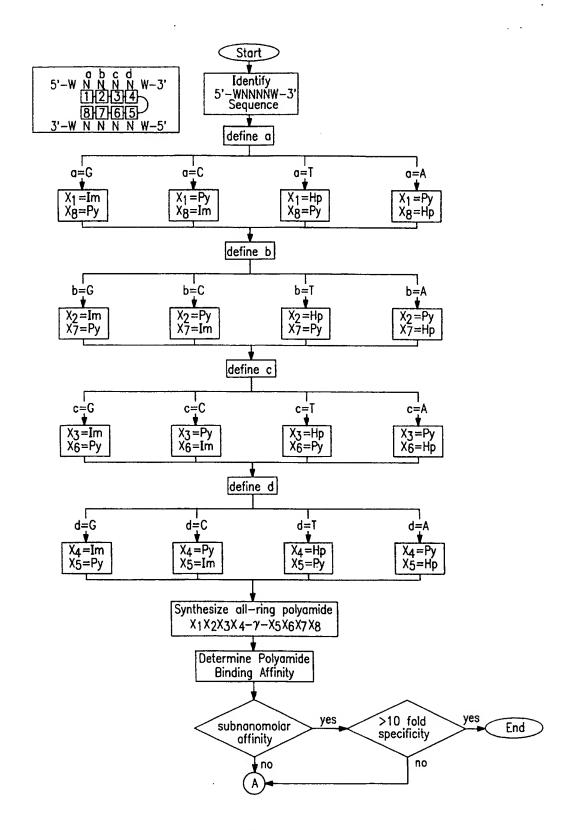


FIG. 5
SUBSTITUTE SHEET (RULE 26)

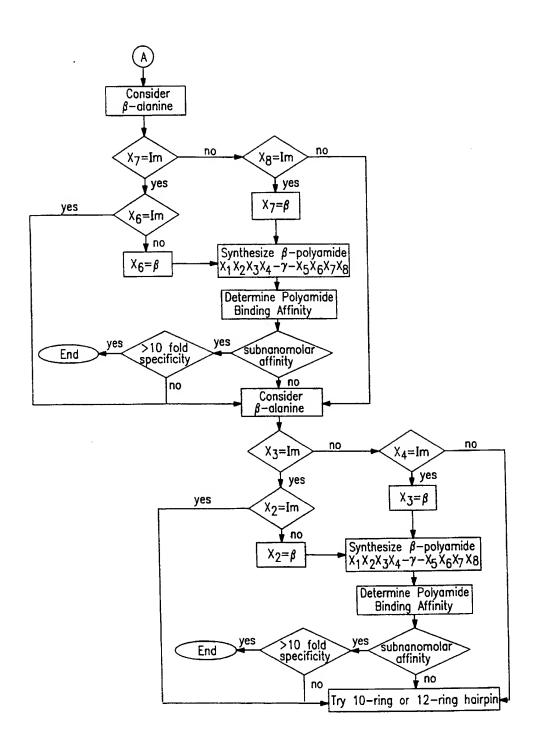


FIG. 6

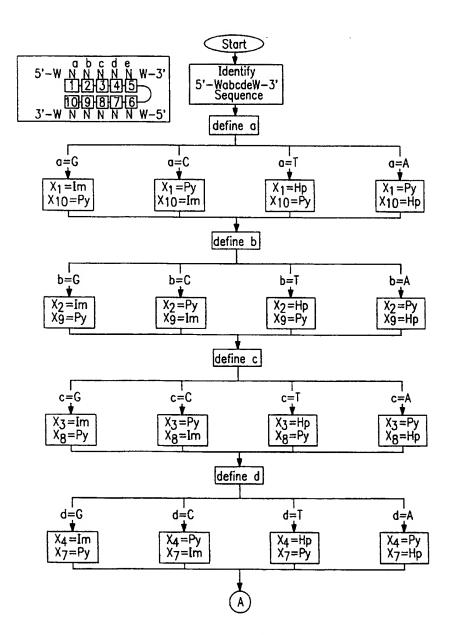


FIG. 7A

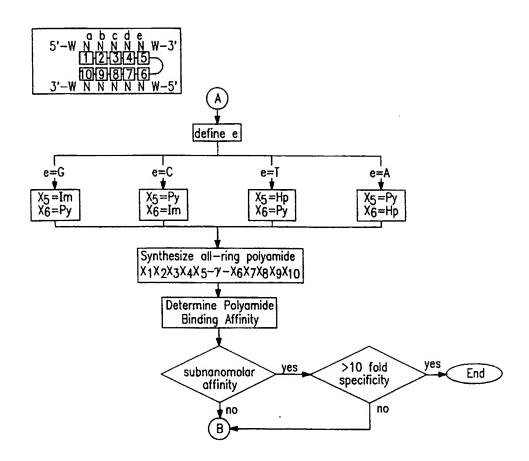


FIG. 7B

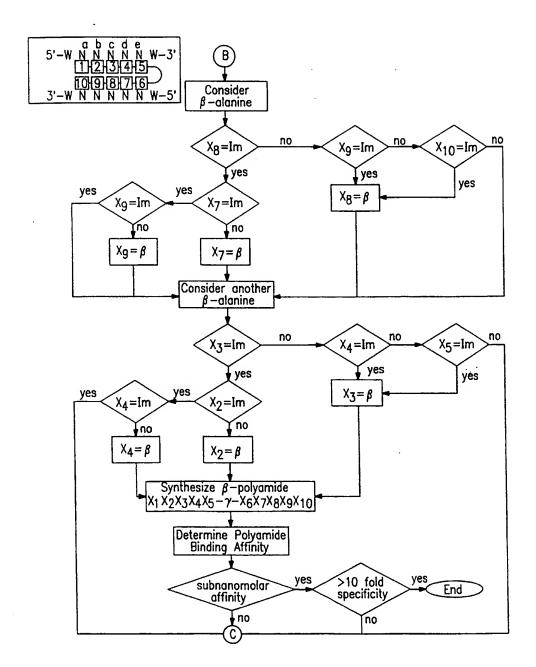


FIG. 8

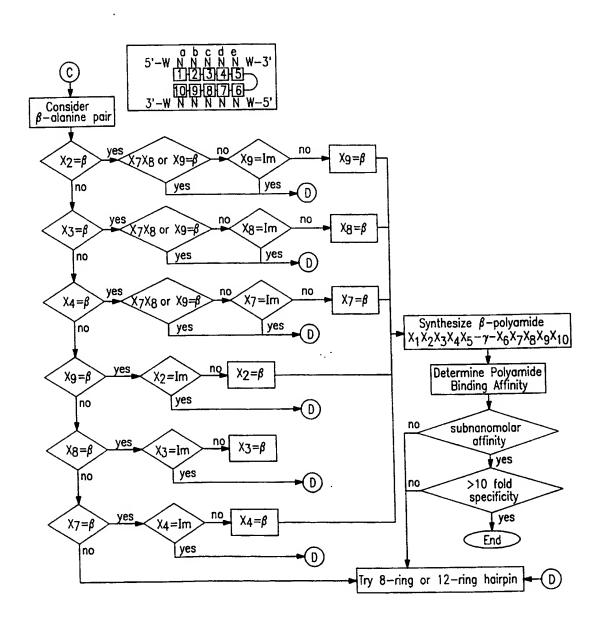


FIG. 9

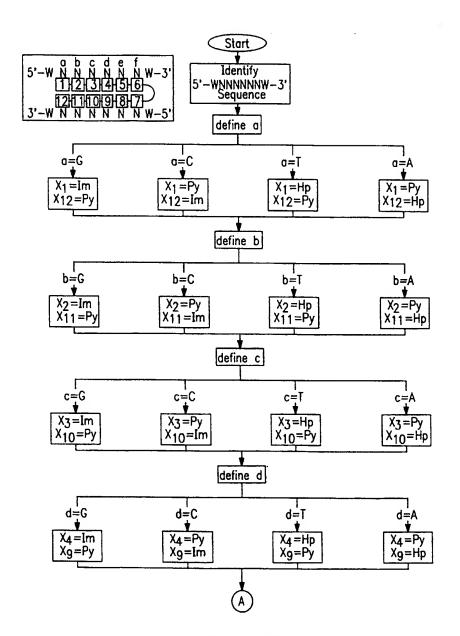


FIG. IOA

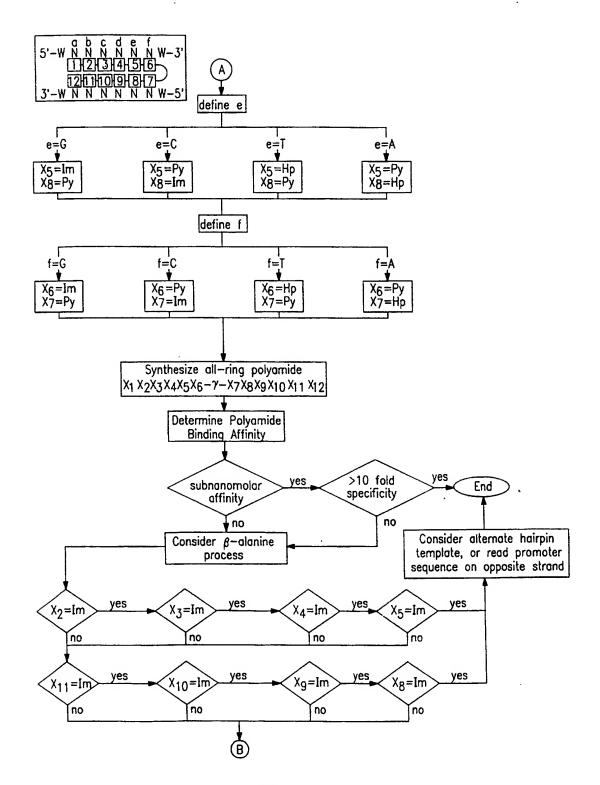


FIG. IOB

SUBSTITUTE SHEET (RULE 26)

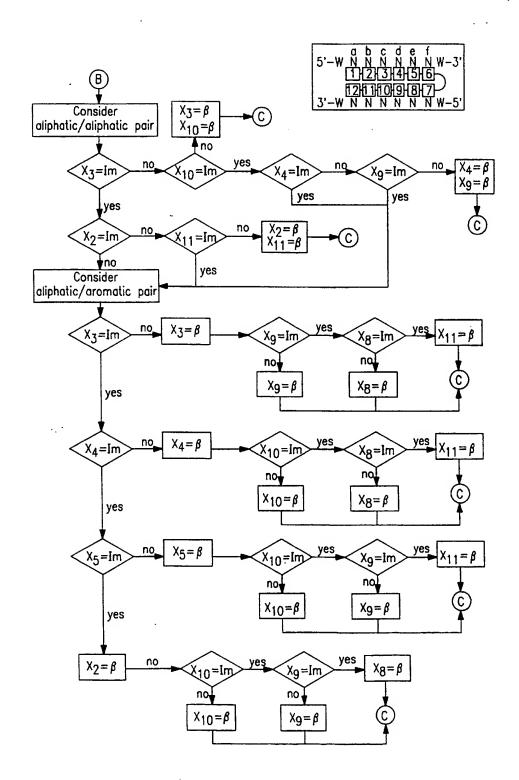


FIG. IIA

SUBSTITUTE SHEET (RULE 26)

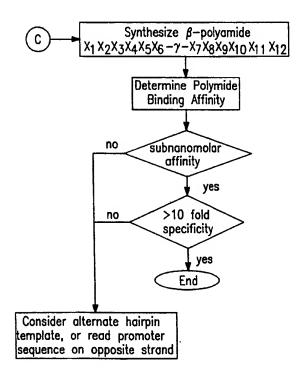


FIG. IIB

INTERNATIONAL SEARCH REPORT

Inte .ional Application No PCT/US 98/01714

A. CLASSIFICATION OF SUBJECT MATTER
TPC 6 C07D207/34 C07D233/90 A61K31/415 C07D403/14 C12Q1/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols) IPC 6 C07D A61K C12Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

Х	J. W. TRAUGER ET AL: "Recognition of DNA by designed ligands at subnanomolar concentrations" NATURE, vol. 382, no. 6591, 8 August 1996, pages 559-561, XP002066256 cited in the application see the whole document	1-12, 42-48
X	E. B. BAIRD ET AL: "Solid phase synthesis of polyamides containing imidazole and pyrrole amino acids" JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, vol. 118, no. 26, July 1996, pages 6141-6146, XP000674666 cited in the application see page 6141 - page 6142	1-5, 42-48

X Further documents are listed in the continuation of box C.	Patent family members are listed in annex.
Special categories of cited documents: A document defining the general state of the art which is not considered to be of particular relevance E earlier document but published on or after the international filing date 'L' document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) O document referring to an oral disclosure, use, exhibition or other means P document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention. "X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone. "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. "&" document member of the same patent family
Date of the actual completion of theinternational search 28 May 1998	Date of mailing of the international search report 1 2. 06. 98
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Voyiazoglou, D

INTER TIONAL SEARCH REPORT

Int. Gonal Application No PCT/US 98/01714

C.(Continua	tion) DOCUMENTS CONSIDERED TO BE RELEVANT	-
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Х	S. E. SWALLEY ET AL: "Recognition of a 5'-(A,T)GGG(A,T)2-3' sequence in the minor groove of DNA by an eight-ring hairpin polyamide" JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, vol. 118, no. 35, 4 September 1996, pages 8198-8206, XP002066377 see page 8198 - page 8202	1-12, 42-48
X	M. E. PARKS ET AL: "Optimization of the hairpin polyamide design for recognition of the minor groove of DNA" JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, vol. 118, no. 26, July 1996, pages 6147-6152, XP000674668 see page 6147 - page 6148	1-5, 42-48
X	M. E. PARKS ET AL: "Recognition of 5'-(A,T)GG(AT)2-3' sequences in the minor groove of DNA by hairpin polyamides" JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, vol. 118, no. 26, July 1996, DC US, pages 6153-6159, XP000674667 see page 6153 - page 6155	1-5, 42-48
P,X	S. E. SWALLEY ET AL: "Discrimination of 5'-GGGG-3', and 5'-GGCC-3' sequences in the minor groove of DNA by eight-ring hairpin polyamides" JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, vol. 119, no. 30, 30 July 1997, DC US, pages 6953-6961, XP002066260 see page 6959 - page 6961	1-12, 42-48
P,X	W. L. WALKER ET AL: "Estimation of the DNA sequence discriminatory ability of hairpin-linked lexitropsins" PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES, U.S.A., vol. 94, no. 11, May 1997, pages 5634-5639, XP002066261 see table 1	1-12, 42-48
A	WO 96 05196 A (PHARMACIA) 22 February 1996	1-12, 16-40, 42-48
	Sec Claim I	

Ins. rational application No. PCT/US 98/01714

INTERNATIONAL SEARCH REPORT

Box I	Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)
This Inte	emational Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:
1. X	Claims Nos.: 13-15,41 because they relate to subject matter not required to be searched by this Authority, namely:
	The claim is so broad that for determining the scope of a meaningful search due account has been taken of rule 33.3 PCT; special emphasis was put on the following subject-matter: claims 1-12,16-40,42-48; pages 1-22; figures
2.	Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
. —	
3	Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).
Box II	Observations where unity of invention is lacking (Continuation of item 2 of first sheet)
This Int	emational Searching Authority found multiple inventions in this international application, as follows:
1.	As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2.	As all searchable claims could be searched without effort justifying an additional tee, this Authority did not invite payment of any additional fee.
3.	As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4.	No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
Remar	The additional search fees were accompanied by the applicant's protest. No protest accompanied the payment of additional search fees.
1	

INTEL TIONAL SEARCH REPORT

tr onai	Application No	
PCT/US	98/01714	

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
WO 9605196	A	22-02-1996	AU AU CA CN EP FI HU JP NO NZ PL ZA	689623 B 3113695 A 2172629 A 1131946 A 0722446 A 961506 A 76267 A 9504039 T 961377 A 290404 A 313821 A	02-04-1998 07-03-1996 22-02-1996 25-09-1996 24-07-1996 05-06-1996 28-07-1997 22-04-1997 30-05-1996 24-04-1997 22-07-1996 18-03-1996

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